DOCUMENT RESUME

ED 113 793 EA 007 569

AUTHOR	McCabe, James; Padhye, N. R.
TITLE	Planning the Location of Schools: The District of Kaski, Nepal. Case Studies -- 4.
INSTITUTION	United Nations Educational, Scientific, and Cultural Organization, Paris (France). International Inst. for Educational Planning.
REPORT NO	ISBN-92-803-1067-4
PUB DATE	75
NOTE	77p.; For related documents, see ED 088 190 and ED 093 067
AVAILABLE FROM	Unipub, Inc., P.O. Box 443, New York, New York 10016 ($9.25)
EDRS PRICE	MF-$0.76 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Case Studies; Educational Planning; *Elementary Secondary Education; Foreign Countries; Geographic Location; Maps; *Planning; *School Demography; School Districts; *School Location; *School Planning; Site Selection
IDENTIFIERS	*Nepal; School Mapping

ABSTRACT

The District of Kaski in central Nepal is analyzed as part of a series of case studies on the application of the school mapping technique. The District of Kaski is placed in the Nepalese context of location, economic and social development, and education. A retrospective analysis is made of the first- and second-level networks from 1966-67 to 1970-71. Enrollment growth, participation and flow rates, origin of pupils, characteristics of school buildings and costs are comparatively analyzed by area. A brief examination of the economic and social background of the district and regional strategy for development is undertaken and a demographic analysis and population forecast is also given. Two schemes for the development of the school network are prepared, compared, and illustrated on maps. An assessment of teacher requirements and a comparative costing of the proposals are also included. The main conclusions of the case study are summarized in the final chapter. (Author/MLF)

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A research project directed by Jacques Hallak at the International Institute for Educational Planning

Planning the location of schools: case studies---4

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Planning the location of schools: The District of Kaski, Nepal

James McCabe and N. R. Padhye

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$9.25

Published in 1975 by the Unesco Press,
7, place de Fontenoy, 75700 Paris
Photoset and printed by St. Paul's Press Limited, Malta

ISBN: 92-803-1067-4

©Unesco 1975
Printed in Malta

Aims and methodology of the IIEP research project on planning the location of schools

As part of the Second United Nations Development Decade, many countries have set themselves the target of providing complete first-level school coverage, or at least of substantially extending their first-level school networks, together with a major development of the network of second-level schools. Achieving these targets in practice will involve them in finding solutions to the many awkward problems which arise in setting up the network of first- and second-level schools; in other words, they will need to develop the most appropriate methods for planning the location of schools.

The International Institute for Educational Planning had these problems in view when, towards the end of 1970, it began a series of investigations into the planning of first- and second-level school location; this was research of a clearly practical kind, meeting a concrete need of most Member States; a typical example of the kind of applied research which the Institute can undertake to assist Unesco Member States in implementing their educational plans and making optimum use of the resources available. Its objective is threefold:

1. To analyse and identify all the factors—pedagogical, economic, geographical, social, administrative, political, etc.—which must be taken into account in designing a methodology for planning the location of schools;
2. To formulate such a methodology in sufficient detail to be used as a guide to school location activities in Member States, while being sufficiently flexible and universal to be adaptable to the particular conditions of each country;
3. To apply the methodology to concrete problems facing education planners, such as universal first-level education, implementation of educational reforms, etc.

The IIEP began with a number of case studies in a sample, as varied as possible, of countries in Asia, Africa, Latin America and Europe. These studies were carried out in the field with the close collaboration of the national authorities and comprised the following specific stages:

1. A critical analysis of the features of the existing network of first- and/or second-level schools, according to the purpose of the study, in one or more educational areas of 50,000 to 200,000 inhabitants, selected for the variety of problems they exhibited;
2. A study of the medium-term evolution of the potential school population, taking account of demographic factors, the educational objectives and certain socio-economic variables;
3. Proposals for rationalizing the location of schools, based on the initial findings and the educational development prospects, and on all the pedagogical, economic, geographical and other factors of general application or peculiar to the region concerned, in each case showing the relative importance of the possible decisions.

These case studies are currently being completed and are being issued as and when they become available.[1] A report on the project as a whole will summarize the conclusions emerging from the case studies and endeavour to identify the methodological principles of planning the location of schools; this report is expected to be completed and published in 1975.

For the studies concerning developing countries, the project has been financed with voluntary contributions from various countries: the Ministry of Overseas Development (United Kingdom), SIDA (Sweden), CIDA (Canada), NORAD (Norway), etc., to which the IIEP is extremely grateful.

The Institute also thanks all the Member States of Unesco and the national specialists for co-operating in the implementation of this project.

1. Publication by the IIEP of studies conducted by outside consultants must not be taken to imply that the Institute necessarily associates itself with any conclusions or opinions expressed therein.

Preface

The Kingdom of Nepal, where this study on school mapping was undertaken, is a small, land-locked country of some 12 million population. Having an annual income per head somewhat below that of India and with over 90 per cent of the population still engaged in agriculture, strenuous efforts are being made to promote economic and social development. In this regard, emphasis has been laid on decentralization of authority and development through regional planning.

The District of Kaski in central Nepal was selected for study in this context, because it is relatively one of the more developed of the seventy-five districts in the country and also because research in the FCE Programme (Free and Compulsory Education) was being conducted there. This district, having a population of 150,000 for an area of 500 square miles, and a steep rise in altitude from 4,000 to 24,000 feet in the Himalayas, has serious communications problems causing formidable obstacles to economic and social development. Some 92 per cent of the population are engaged in agriculture and a similar percentage of farms are below 2.5 acres in size although 5 acres is considered minimal for bare subsistence. In addition, the illiteracy rate is over 90 per cent for women and some 70 per cent for men.

This case study, then, is of special interest among the series on school mapping undertaken by the IIEP, not only because of the problematic economic and social background just outlined but also because Nepal had just introduced its first five-year Education Plan in which many fundamental reforms were proposed, including a major structural change from a '5-3-2' to a '3-4-3' system. It is of particular interest to see how the aims and targets of the national plan relate to this district and to what extent the school mapping technique can facilitate implementation.

For comparative analysis purposes the authors divided the district into twelve areas and data were collected for first- and second-level education on this basis for a recent five-year period. Absolute and relative enrolment growth, participation and flow rates, geographical origin of pupils, teacher qualifications, school size and standard of accommodation, unit cost and financing are examined in the report.

Many overall weaknesses and many inequalities across the district were diagnosed. Girls comprised only 20 per cent of pupils enrolled at the first level and a mere 12 per cent at the second level. The fact that 47 per cent of all second-level pupils were enrolled in schools in the capital, Pokhara, is indicative of many inequalities discovered. Wastage was also very heavy; only 2 out of every 3 pupils who entered first level complete the course; retention rate was only slightly better at the second level.

In addition, the incidence of untrained teachers was found to be extremely high (64 and 79 per cent in first and second levels respectively) and over two-thirds of first-level teachers had not obtained the School Leaving Certificate. Utilization of teachers, as indicated by pupil/teacher ratios of 28.3 and 18.5 for first and second levels, fell short of the national norms of 30 and 25.

Low average pupil/teacher ratio is to a large degree attributable to the high instance of very small schools; in effect only 4 and 13 per cent of first- and second-level schools respectively had enrolments greater than 200. Finally, there was a wide gap between unit cost per pupil of 41 rupees at the first level and 177 rupees at the second level.

Against this background the authors, J. McCabe and N. R. Padhye, have attempted in an interesting way to align the development of the educational network to planned economic and social development for the region and the district. In doing this they made a certain examination of the economic, social and demographic problems of the district in the context of the strategy to be implemented for regional development. Alignment of educational development for the district to planned economic and social development for the region in the manner shown forms an important dimension of the school-mapping approach, not only because it provides a rational basis for enrolment forecasting but also because it constitutes an important move towards integrated regional planning.

The approach used for preparation of proposals for development of the school network has real practical application, both for planning by District Education Officers and for evaluation of the progress of implementation at the Ministry of education. Thus, while a national average rate of participation of 64 per cent at the first level in the reformed system has been set for Nepal, it is obvious that different rates will be achieved among the seventy-five

districts and indeed rates will differ by area within districts. What then is a feasible target to set for Kaski or for any other district? The authors conclude in a well-illustrated way that the national target is not sufficiently ambitious for Kaski and that it is realistic to aim at 100 per cent apparent participation rate for the 6 to 8 age-group by 1976 and perhaps even compulsory education for this age-group by 1981.

The rationale employed for preparing proposals for the location of schools also has wide practical application. Thus, as a first iteration, the population required to justify provision of a full primary-middle-high school supply (at a certain participation rate) is calculated, leading towards a definition of catchment areas with a view to equalization of educational opportunity throughout the district. It is made clear that the iteration process thereafter must be thorough before final proposals for rational development of the school network are made, not only taking the following factors into account but also having full discussions on them with all the interested parties:

—educational objectives and targets;
—base-year participation rates;
—existing school network *vis-à-vis* topography, communications, village size and potential growth;
—economic and social development programmes for the district;
—feasibility from financial, physical and staffing viewpoints.

Two sets of proposals for development of the school network are prepared in the report, the first based on the national average apparent participation target of 64 per cent set in the Education Plan and the other on a more ambitious rate of 100 per cent by 1976. It is clearly shown that while the first scheme would curtail enrolment growth momentum, the second, in accordance with the spirit of the national plan, would boost first-level enrolments considerably, maintain steady expansion at the second level and ensure full utilization of existing first-level accommodation and staff. Implementation of the second scheme would entail addition of 7 new primary schools (including the relocation of 2 schools) and the phasing-out of 9 others; at the second level there would be a net increase of 13 middle and 1 middle/high schools. In brief, this scheme represents a realistic, compromise proposal for rationalization by striking a balance between economic and social objectives; there is consolidation for more efficient utilization of resources but some of the reduction in inequalities of supply is based more on social than on economic considerations. Yet it is shown to be feasible to implement the second scheme while effecting reductions in unit cost per pupil (at base-year prices), slight at the first level but quite substantial at the second level.

Of course the authors emphasize that there are prerequisites for successful implementation other than setting feasible targets. For example, if participation targets are to be achieved, a change of attitude among some parents to the usefulness of sending their children to school and alignment of the school programme to the real needs of the community must be effected. Some suggestions made include the launching of a well-planned information campaign beamed at parents, change of the school-year to better suit the agricultural calendar, and development of the curriculum around agricultural and para-agricultural activities.

It is correctly pointed out that the structural change from a '5-3-2' to a '3-4-3' system laid down in the Education Plan does not constitute in itself a formula for a more efficient education system; this reform has inherently a cost-increasing effect, giving a more costly second-level status to a large proportion of would-be first-level pupils. It is also implied by the authors that the norms for minimum size of secondary schools may be too small for efficient utilization of the specialist staff and accommodation required to impart pre-vocational skills.

This case study on the District of Kaski will provide useful guidelines for tackling priority problems in other districts and will form a valuable reference document for the preparation of Nepal's second education plan. The report constitutes, too, a good basic document for training in school mapping methods in Nepal and elsewhere. Indeed this study prepared by J. McCabe and N. R. Padhye makes an important contribution to the development of school location methodology, especially by the way in which school mapping is shown to facilitate the integration of educational planning into regional economic and social planning.

RAYMOND POIGNANT

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This report prepared by James McCabe at the International Institute for Educational Planning is based on data collected for the District of Kaski, Nepal under the supervision of Mr. Nilakantha Re[illegible]dhye, Under-Secretary, Ministry of education, Kathmandu.

Introduction

1. General

It is now generally agreed, by educational planners and administrators alike, that a major obstacle to educational development is the bottleneck which occurs at the implementation stage. It was considered at the International Institute for Educational Planning that the school mapping technique could make an important contribution towards the solution of this major problem. To assess this contribution a series of case studies on the application of this technique was undertaken in selected countries in each continent at various stages of economic development and having quite different educational systems.

This case study on the District of Kaski in Nepal is one of the series. The context for the application of the school mapping technique here is particularly interesting. It is as follows:

(*a*) The first- and second-level school networks, having made a spontaneous, unplanned and rapid growth over the last twenty years from practically nothing, now serve almost the whole district;

(*b*) Since this development depended generally on local initiative and often on political pressures, many irrationalities and inequalities became embedded in the system;

(*c*) At this critical stage growth, broadly speaking, must come from increased participation within the present network rather than from further proliferation;

(*d*) A national educational plan has been prepared in which it is proposed to introduce from 1971 a major structural reform from a '5-3-2' to a '3-4-3' system; an overall target of 64 per cent apparent participation for the new first-level age-group has been set in the plan which also includes equalization of educational opportunity as a major aim.[1]

The main interest lies then in testing to what extent application of the school mapping technique in these circumstances can:

(*a*) Assess the aims and targets of the national plan as they relate to the District of Kaski;

(*b*) Constitute a useful administrative instrument for the introduction of reforms and for rationalization generally;

(*c*) Facilitate implementation and continuous evaluation of the plan.

2. Aims and scope of the case study

With the above factors in mind the main aims of this case study may be stated as follows:

(*a*) To diagnose the existing network in the District of Kaski;

(*b*) To examine the economic and social perspective within which the school network must be developed, both as a rational basis for making enrolment projections and for a better understanding of the problems of the community the schools are meant to serve;

(*c*) To assess the feasibility of achieving the participation targets set in the plan and to assess a feasible time-horizon for achievement of universal three-year first-level education;

(*d*) To prepare proposals for the development of the first- and second-level school network to 1976.

The report must necessarily be mainly quantitative in nature though, of course, pedagogical and other qualitative aspects are considered throughout. Nor is it possible in this study to devote much attention to the administrative structure and control of the system. Likewise, behavioural obstacles to development, though deserving of study, must be excluded.

3. Approach and structure

In Chapter I the District of Kaski is placed in the Nepalese context of location, economic and social development, and education.

Then, in Chapter II, retrospective analysis is made of the first- and second-level networks from 1966/67 to 1970/71. Enrolment growth, participation and flow rates, origin of pupils, characteristics of school buildings and costs are comparatively analysed by area.

1. *National education system plan for 1971–76*, Kathmandu, Ministry of Education, 1971.

A brief examination of the economic and social background of the district and regional strategy for development is undertaken in Chapter III, where a certain demographic analysis and population forecast by *panchayat* is also given.

Two schemes for the development of the school network are prepared and compared in Chapter IV. The proposals are illustrated on maps which indicate the school networks as they might be in 1976 depending on the scheme followed. This chapter also contains an assessment of teacher requirements and a comparative costing of the proposals made.

In Chapter V the main conclusions of the case study are summarized.

I. Background

1. General

The aim of this first chapter is to give the reader a brief introduction to the District of Kaski, placing it in the Nepalese context of location, economic and social development, and education.

It is helpful first to look briefly at the country itself. Nepal is a small country (11.29 million people, 1971), landlocked, and covers an area of 54,400 square miles. It is located between China to the north and India to the south. Altitudinal differences vary dramatically from 4,000 feet in the southern plains to 29,000 feet in the Himalayan ranges, which form the northern frontier.

This is a sovereign Hindu Kingdom. The King is the source of all executive, legislative and judicial powers. A *panchayat* system was introduced in 1962 with the main objectives of mobilizing human and physical resources and developing local leadership. With this decentralization, a comprehensive local authority system of government was established under which seventy-five district *panchayats* will have statutory powers relating especially to the development of education, health and agriculture; district *panchayats* may in turn delegate some powers to local *panchayats*. Village and town *panchayats* elect members to district *panchayats*, which are organized into fourteen zonal committees. The National *Panchayat* (parliament) has a membership of 125, of whom thirty-five are nominated and the remainder are elected district *panchayat* members—at least one from each district.

About 93 per cent of the population are engaged in agriculture; 20 per cent of the country's surface area is under cultivation and some 65 per cent of the gross domestic product comes from the agricultural sector. Annual income per head is somewhat below that of India, Pakistan and Sri Lanka. About 95 per cent of foreign trade is with India; food accounts for about 65 per cent and finished goods for some 13 per cent of exports. Although there are 1,400 km of all-weather roads, lack of surface communications is a major obstacle to economic development.

The District of Kaski, forming part of the Gandaki Zone, has an area of 503 square miles and rises from 4,000 feet to 24,000 at the base of the Himalayas (see Map 1). The district had a population of 151,749 in 1971. Other demographic statistics for Nepal and Kaski are given in Table 1.

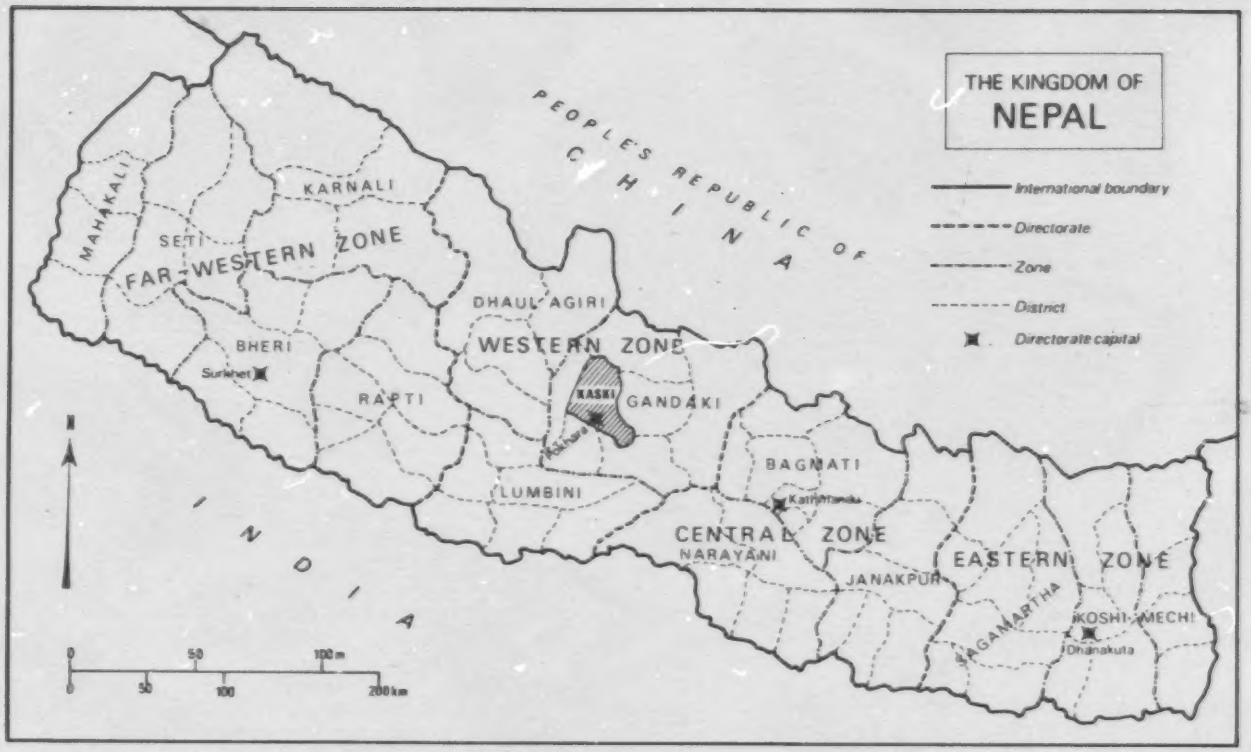
Of the total population of Kaski, 65,524 (43 per cent of population over 10 years old) have been classified as economically active and 60,365 or 92 per cent of these are engaged in agriculture. For the rest, 1,886 are engaged in commerce and 1,939 in manufacturing, construction and transport. In the census 24.7 per cent of men and 7.0 per cent of women are recorded as literate.

Economic and social problems are more pronounced at the higher altitudes, mainly to the north of the district where density of population per square mile of arable land is relatively higher. In fact these areas are food-deficit in contrast to the food-surplus lower reaches. Farms are too small with much fragmentation and income is very low. Exchange marketing between the higher and lower reaches of the district is not well developed.

TABLE 1. Demographic comparison, Nepal and Kaski

	Population			Average annual rates per 1,000			
	1966	1971	P.a. growth %	Births	Deaths	Natural increase	Net emigration
Nepal	10 280 000	11 290 000	1.96	44.6	22.9	21.7	2.1
Kaski	139 632	151 749	1.7	41.0	22.9	18.1	1.1

SOURCE *Demographic yearbook, 1971*, New York, United Nations Statistical Office, 1972 and Central Bureau of Statistics, Kathmandu, and survey data



MAP 1. *Location of the District of Kaski*

2. Educational system

A major structural reform of the educational system is to be introduced with the implementation of the national education plan.[1] This involves a change from a '5-3-2' to a '3-4-3' structure as illustrated in Table 2.

Administrative organization of the education system is shown in Figure 1. It has also been aimed to decentralize the system for decision-making, participation and finance-raising purposes. Thus the Village and Town *Panchayat* Amendment Acts of 1964 and 1965 empowered local authorities to raise an education tax. It was intended that the formation of district education committees and school management committees would initiate the mobilization of human and physical resources, co-ordinate village, district and national activities, and encourage self-help.

Accordingly, at the local level the District Education Office has been reorganized and expanded to include new functions. More powers and responsibility have been given to the District Education Committee (under the direction of the District Education Officer, DEO), and to the School Management Committees, both representative bodies. In addition, each school has formed a Co-ordination Committee representing the local *panchayat* and the community for the purpose of raising funds for premises and equipment.

1. *National education system plan*, op. cit.

TABLE 2. The structural reform of the educational system

		I	II	III	IV	V	VI	VII	VIII	IX	X
PRE-REFORM											
First level	Primary	*	*	*	*	*					
Second level											
First stage	Middle						*	*	*		
Second stage	High[1]									*	*
POST-REFORM											
First level	Primary	*	*	*							
Second level											
First stage	Middle				*	*	*	*			
Second stage	High[1]								*	*	*

1. Second-level/first-stage courses are taken in middle schools, but generally first and second stages of second-level education are taken in middle/high schools.

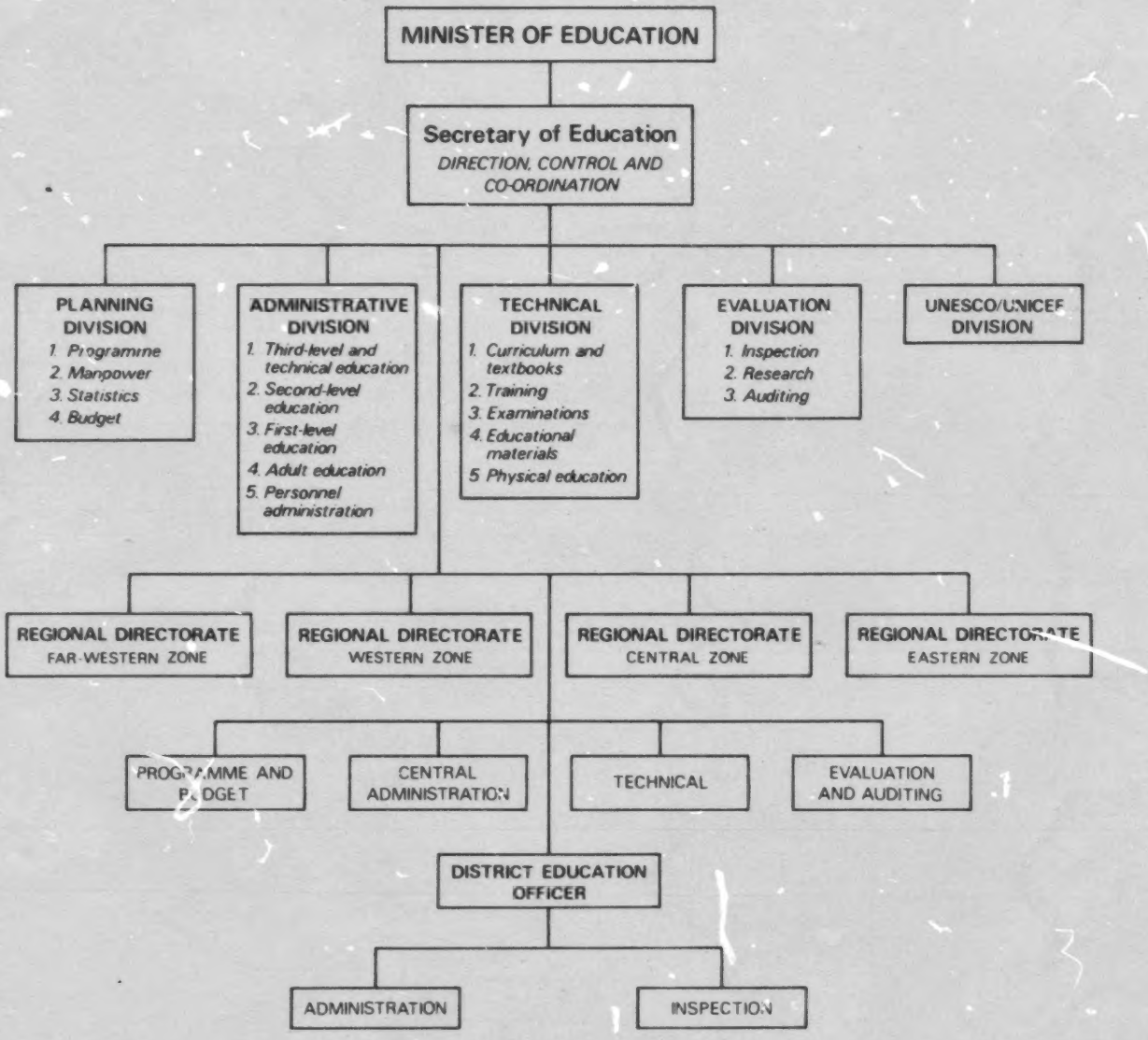


FIGURE 1. *Administrative organization of the educational system*

While education generally is neither free nor compulsory, experimental projects in this regard have been conducted in Kaski, which, relatively speaking, is one of the more developed districts of the country. Indicative ages by level pre- and post-reform are shown in Table 3.

The apparent participation rate for first-level education in Nepal, which is mainly state-aided, is about 35 per cent. The admission rate to second-level education, which is mainly privately financed, is put at about 65 per cent of grade V.

There are twenty-four degree-granting colleges and twelve junior colleges, all affiliated to the National University. Total enrolment of these institutions is approximately

TABLE 3. Pre- and post-reform indicative ages

	Age	Grade	Duration
PRE-REFORM			
First level	6–10 years	I–V	5 years
Second level			
First stage	11–13 years	VI–VIII	3 years
Second stage	14–15 years	IX–X	2 years
POST-REFORM			
First level	6–8 years	I–III	3 years
Second level			
First stage	9–12 years	IV–VII	4 years
Second stage	13–15 years	VIII–X	3 years

15 per cent of the stock of second-level pupils, with a 19 per cent ratio of girls. Courses are strongly biased towards the liberal arts. Legally, education is governed by the University Act and the Education Act of 1967, wherein departmental regulations are stated.[1]

3. Other educational agents

It must be mentioned that there are many other educational agents operating in the District of Kaski besides the full-time formal first- and second-level systems. In the course of performing their functions, which are more directly aligned to economic and social development, the Regional and District Development Offices (with headquarters in the capital, Pokhara) exert an important educational influence. Of particular importance, too, are the activities of the Agricultural Extension workers who deal directly with the day-to-day problems of more and more farmers in a country seen to be largely dependent upon agriculture. Of course, it is aimed that the District Education Office and the education system generally should work closely with these other agents. Local *panchayats* and voluntary organizations (especially the Women's Organization) also exert important educational influence. Adult or out-of-school education, however, is generally not well organized throughout the district.

1. For detailed structure of the education system before and after the reform, see Appendix, Figure 1.

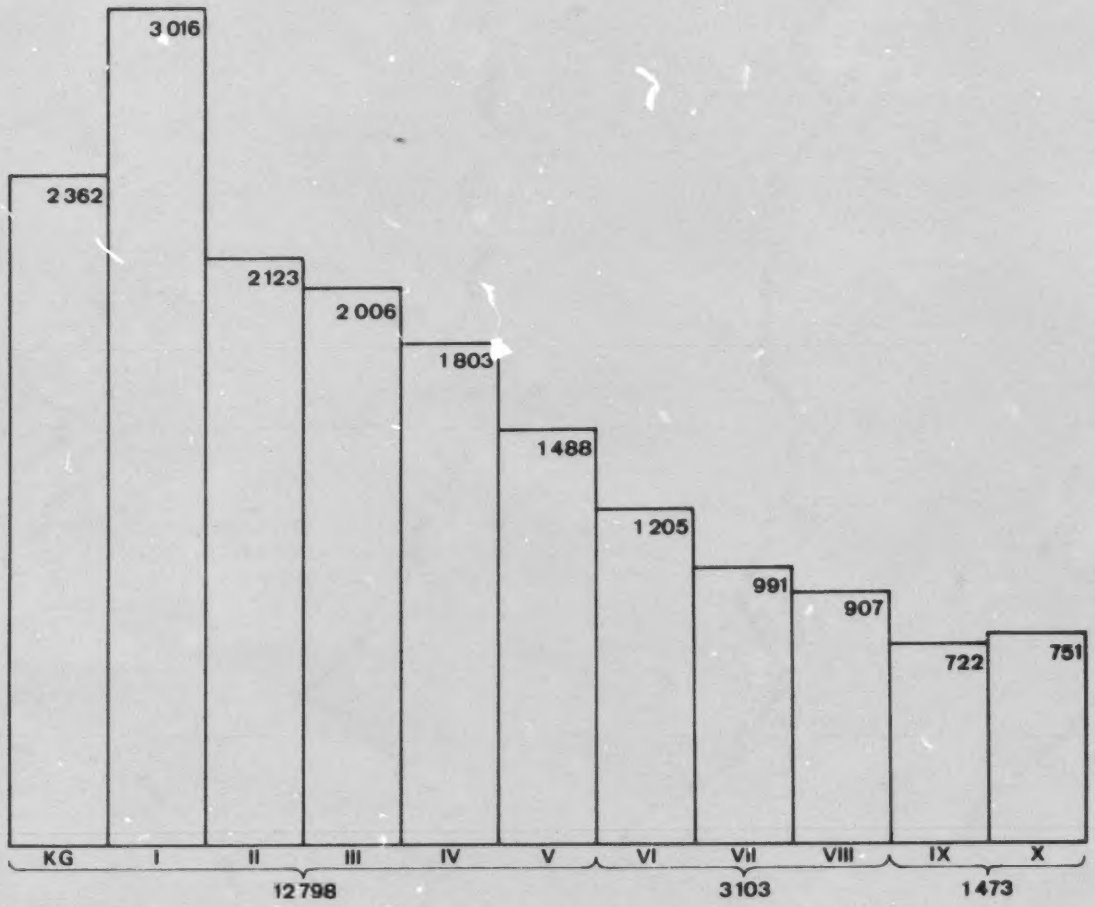


FIGURE 2. *First- and second-level enrolment by grade, 1970/71*

II. Existing school network

1. General outline

The network of first- and second-level schools in 1971 is illustrated in Map 2. The following schools are included:

	Schools	Enrolment
First level:		
Primary and kindergarten	160	12 798
Second level:		
'Middle' schools (first stage only)	19	938
Middle/high schools (first and second stages)	21	3 638

A '5-3-2' system was in operation, that is, kindergarten–V, first level; VI–VIII, second level/first stage; IX–X, second level/second stage. A total of 3,103 pupils were enrolled in the first stage and 1,473 in the second stage of second-level education. Relative enrolment size by grade is shown in Figure 2.

The chronological development of the first-level network is shown in Table 4.[1] Here it is seen that there was a remarkably rapid development from 48 schools in 1957 to 110 in 1962 after which there was little further network spread. It may be noticed that all fifteen schools in area A (which contains the capital Pokhara) were established after 1963. The build-up of the second-level network is also of recent origin.

TABLE 4. Chronological development of first-level school network

Area	1953–57	1958–62	1963–67	1968–71	Total
A[1]	—	—	15	—	15
B	3	4	1	1	9
C	8	6	1	2	17
D	5	8	1	—	14
E	2	6	2	2	12
F	3	2	—	—	5
G	3	2	5	3	13
H	4	4	3	—	11
I	3	3	—	—	6
J	2	5	—	—	7
K	4	4	4	2	14
L	3	8	2	1	14
M	2	4	—	—	6
N	1	3	1	1	6
O	5	3	1	2	11
TOTAL	48	+ 62	+ 36	+ 14	160

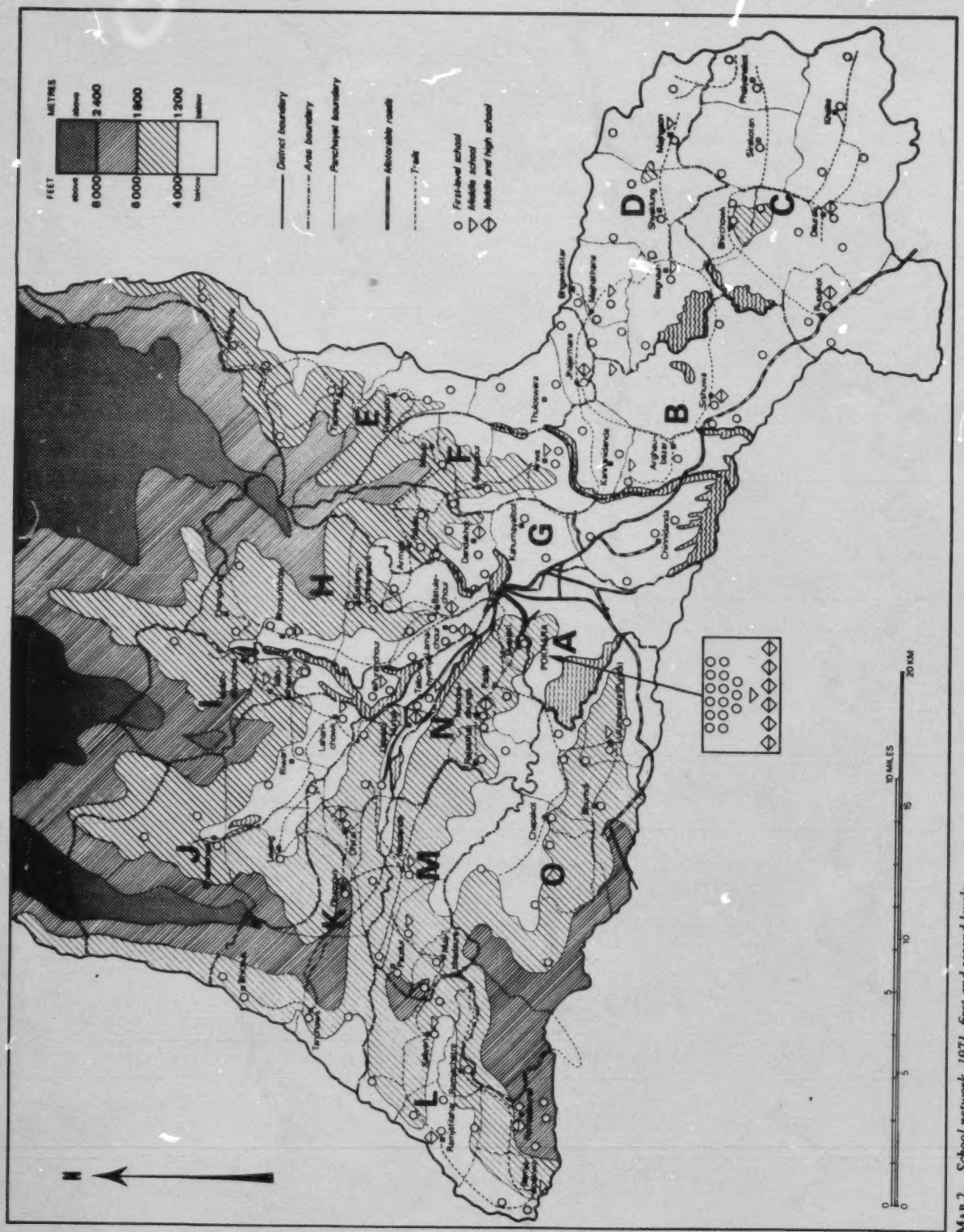
1. See Map 2 for an explanation of the area coding.

2. Enrolment

A. FIRST LEVEL

Absolute enrolment growth at the first level between 1966/67 and 1970/71 with a breakdown for boys and girls is given in Table 5. There was a large increase of 49 per cent in enrolment over this period from 8,583 to 12,798, which corresponds with the rapid development of the school network seen earlier. This increase, however, was uneven geographically with good growth in M and N and a modest increase only in B, C, D, H and O. It is worthy of note that 20 per cent of total enrolment in 1971 was in area A. Worth mentioning, too, is the fact that up to 18 per cent of pupils are in kindergarten (pre-primary) classes.

1. For comparison purposes the district was divided into fifteen units of approximately equal population. The units comprise combined village *panchayats* and are coded A, B, C, etc., to be used hereafter for convenience (see Map 2).



MAP 2. *School network, 1971, first and second levels*

TABLE 5. First-level enrolment growth from 1966/67 to 1970/71

Area	1966/67 M	1966/67 F	1967/68 M	1967/68 F	1968/69 M	1968/69 F	1969/70 M	1969/70 F	1970/71 M	1970/71 F
A	1 180	498	1 213	523	1 407	649	1 456	653	1 701	891
B	646	93	685	113	735	145	746	167	775	213
C	887	132	911	159	922	185	927	203	1 096	233
D	600	73	604	99	688	111	701	113	787	149
E	415	61	429	79	491	92	544	99	615	122
F	171	31	256	43	306	54	324	61	327	61
G	322	65	337	107	351	127	398	137	512	172
H	648	63	694	71	711	104	756	126	775	168
I	274	29	289	32	342	42	360	48	393	63
J	241	31	252	35	278	51	294	63	360	72
K	552	25	559	46	613	77	677	89	749	107
L	537	21	563	38	589	69	651	78	694	99
M	199	8	271	19	298	29	341	33	401	42
N	202	7	249	9	291	15	339	19	464	29
O	499	73	529	81	570	99	604	103	605	123
TOTAL	7 373 + 1 210		7 841 + 1 454		8 592 + 1 849		9 118 + 1 992		10 254 + 2 544	
GRAND TOTAL	8 583		9 295		10 441		11 110		12 798	
of which Kindergarten (pre-primary)	1 470		1 563		1 662		1 901		2 362	
Kindergarten % of total	17		17		16		17		18	
Girls % of total	14		16		18		18		20	

NOTE Geographical distribution of pre-primary enrolments 1966/67 to 1970/71 is given in the Appendix, Table 1.

The very low proportion of girls enrolled is also evident, and its improvement must receive priority consideration, though the trend towards increase from 14 to 20 per cent must be noted. Again there is a wide variation in this regard throughout the district as is shown in Table 6.

TABLE 6. Percentage of girls enrolled 1966/67 and 1970/71

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1966/67	30	13	13	11	13	15	17	9	10	11	4	4	4	3	13
1970/71	34	22	18	16	26	16	25	18	14	17	13	12	9	6	17

TABLE 7. Second-level enrolment, 1970/71[1]

Area	First stage (VI–VIII) M	F	Total first stage	Second stage (IX–X) M	F	Total second stage	Total (VI–X) M	F	Total second level	Girls % of total
A[2]	955	262	1 217	755	168	923	1 710	430	2 140	20
B	189	28	217	70	3	73	259	31	290	11
C	213	6	219	115	5	120	328	11	339	3
D	190	15	205	—	—	—	190	15	205	7
E	105	11	116	50	—	50	155	11	166	7
F	59	—	59	—	—	—	59	—	59	—
G	88	3	91	32	—	32	120	3	123	2
H	219	9	228	87	2	89	306	11	317	3
I	84	2	86	—	—	—	84	2	86	2
J	29	7	36	—	—	—	29	7	36	19
K	205	8	213	97	1	98	302	9	311	3
L	207	8	215	82	2	84	289	10	299	3
M	115	1	116	—	—	—	115	1	116	1
N	29	1	30	4	—	4	33	1	34	3
O	48	7	55	—	—	—	48	7	55	13
TOTAL	2 735	368	3 103	1 292	181	1 473	4 027	549	4 576	12

1. See Appendix, Table 3 for breakdown by grade.
2. Includes forty boarders out of a total enrolment of 158 in Bhadra Kali Public High School and Kudahar School, Pokhara.

B. SECOND LEVEL

Details of enrolment at the second level in 1970/71 are given in Table 7. Approximately one-third of total pupils (32 per cent) are taking second-stage courses, though here again there is variation from a low of 12 in N to a high of 43 per cent in A. It is to be noted too, that A, the Pokhara area, accounts for about 47 per cent of all second-level pupils, which contrasts sharply with its 20 per cent share of first-level pupils.

It is also clear from this table that participation of girls in second-level education is extremely low; only 17 per cent of the total enrolled are girls. Indeed, with the exception of A, J, O and B (having percentages of 20, 19, 13 and 11 respectively), less than 1 in 10 of enrolled pupils are girls. Thus, increasing the proportion of girls enrolled is also a priority problem at this level and this increase is also linked with that in the first level.

3. Participation rates

Apparent participation rates for kindergarten, grades I to V and separately for girls are given in Table 8.

A relatively high average rate of 51.9 per cent is recorded for kindergarten pupils. However, it must be mentioned that the rate is measured against the 5-year-old population only, whereas it is fairly certain that a much wider age-band is enrolled, including a fair number of late starters. Rather low rates are shown for C, G, J and D.

Average rate of 54 per cent is shown for grades I–V but there is a wide variance in the rate throughout the district. The urban area A scores an exceptionally high rate of 97 per cent; only one other area (D) crosses the 60 per cent mark and five areas (J, K, L, M, N) have rates below 40, with M having the lowest rate of 30.3 per cent.

It is appropriate to mention here that the age band attending school is very wide. While exact data are not available, estimates are made that 10 and 25 per cent of total enrolment consists of pre-6-year-old and post-10-year-old pupils respectively.

The acuteness of the problem of girls' participation is again highlighted in Table 8. The average rate for girls is 20.2 per cent. Here, too, area A shows an exceptional rate of 64.5 which contrasts sharply with all other areas; indeed the five areas J–N all have rates below 10 per cent, as Map 3 shows.

As may be seen from the ranking columns there is a fairly significant correlation between the participation rates by area for pre-primary, grades I–V and for girls. Relating these findings to the school network map it may be seen that the problem of improving participation is more pronounced in the mountainous areas (I–N) in the western side of the district.

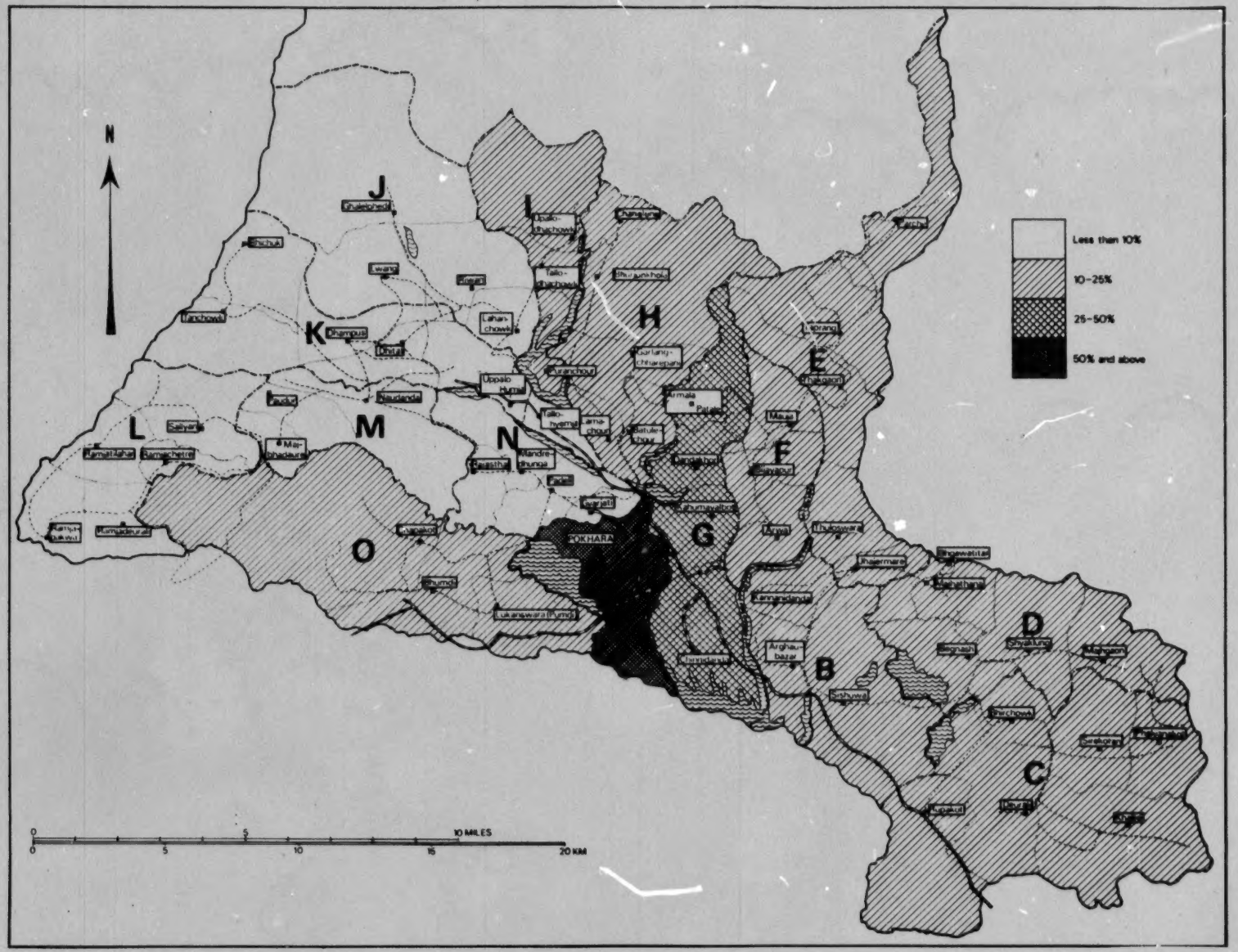
Apparent participation rates for kindergarten–III and grades I–III (on the basis of estimated 6–8-year-old population) are given in Table 9. These figures are of particular interest on account of the '5-3-2' to '3-4-3' structural reform and the target set of 64 per cent participation. It would appear even at this stage from these figures that the

TABLE 8. Apparent participation rates at the first level in 1970/71

Area	Estimated population			Enrolments			Apparent participation rates					
	Age 5	6–10	Girls 6–10	Kindergarten	Grades I–V	Girls I–V	Kindergarten	Rank	Grades I–V	Rank	Girls I–V	Rank
A	618	2 624	1 352	45	2 547	873	65.9	3	97.0	1	64.5	1
B	307	1 306	673	288	700	144	93.8	1	53.6	6	21.4	3
C	423	1 797	926	407	922	129	10.6	15	51.3	7	13.9	8
D	314	1 336	687	126	810	109	40.1	12	60.6	2	15.9	5
E	292	1 289	639	181	556	88	62.0	7	43.1	9	13.8	9
F	149	631	326	97	291	47	65.1	4	46.1	8	14.4	7
G	265	1 125	579	37	647	160	14.0	14	57.5	4	27.6	2
H	316	1 341	691	145	798	124	45.9	11	59.5	3	18.0	4
I	168	715	368	124	332	43	73.8	2	46.4	10	11.7	10
J	227	963	495	72	360	49	31.7	13	37.4	13	9.9	11
K	393	1 666	858	209	647	65	53.2	9	38.8	11	7.6	12
L	351	1 489	767	224	569	58	63.8	5	38.2	12	7.6	12
M	237	1 016	524	135	308	23	57.0	8	30.3	15	4.4	14
N	239	1 015	523	116	377	119	48.5	10	37.1	14	3.6	15
O	248	1 015	543	156	572	81	62.9	6	56.3	5	14.9	6
TOTAL	4 547	19 328	9 951	2 362	10 436	2112	51.9	—	54.0	—	20.2	—

TABLE 9. Apparent participation rates 6 to 8 age-group (grades I–III) in 1971

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total
Estimated 6–8-year-old population	1 608	800	1 102	818	759	387	689	822	438	590	1 021	912	623	622	646	11 837
Enrolment: grades I–III	1 803	497	629	569	415	189	440	521	209	248	432	368	199	235	391	7 145
Kindergarten–III	1 848	785	1 036	695	596	286	477	666	333	320	641	592	334	351	547	9 507
App. partic. rate: I–III	112.1	62.1	57.1	69.6	54.7	48.8	63.9	63.4	47.7	42.0	42.3	40.3	31.9	37.8	60.5	60.4
Kindergarten–III	114.9	98.1	94.0	85.0	78.5	73.9	69.2	81.0	76.0	54.2	62.8	64.9	53.6	56.4	84.7	80.3
% girls enrolled	37.1	19.9	13.8	31.5	17.8	15.9	28.9	28.9	15.8	14.5	12.0	12.0	9.1	5.1	28.4	19.8



MAP 3. *Participation of girls at the first level*

national target (on an apparent participation basis) is already surpassed in the District of Kaski.

Examination of participation rates at the second level is not undertaken here for lack of data but in any case second-level enrolment is perhaps better related to the stock and flow of first-level pupils.[1]

What are the main reasons for low participation rates? Broadly speaking they may be attributed to parental attitudes, local traditions, economic necessities, difficult terrain and shortcomings of the schools themselves. Thus, parents, of which the vast majority are small farmers, have a deep attachment to the land and ardently desire their children to remain on it. Accordingly, they harbour a certain suspicion of schools which they see as agents of change drawing their children away from their old traditions. Their traditions, too, grant the son a 'religious' role in parents' lives in contrast to the role of the daughter.[2] Parents do not wish their daughters to be taught with boys after the age 12. Indeed, the girl gains status only on marriage which takes place largely at this early age. Economic necessities and difficult terrain are also major obstacles to participation as succinctly explained in the following passage:[3]

> 'As soon as he reaches the age of six or seven, the child has to play his part in the family's economic life: in the first place, he helps in the fields, particularly during the busy season when there is a regular drop—sometimes as much as 50 to 60 per cent—in the school attendance figures. Besides working in the fields, the child helps at home by looking after the young children and giving a hand with the cooking, but above all he helps with the fetching of wood and water and the cutting of the grass which is fed to the animals. At Siklis wood has to be fetched from the neighbouring hill: it is not far as the crow flies, but the trip involves walking down to the bottom of one hill, climbing the slope of the opposite hill and repeating the process in reverse on the return journey; groups of little girls set out at nine in the morning and do not get home until five in the afternoon, their backs bent under the biggest load they are capable of carrying. January is the month when the inhabitants of Siklis scan the skies every day for the first signs of the coming snow; it is therefore urgent to collect as much wood as possible every day to lay in provisions for the winter monsoon season. The children's help is thus an integral part of the family's way of life and is regarded as necessary to a well-run home; the absence of a child quite often has the effect of destroying the equilibrium and harmony of the household. The child is literally too busy to find time to go to school. It is quite common for a child to be sent to school between the ages of seven and ten, which is the period when he is only starting to play an active part in family life, but in nearly all cases irregular attendance and absenteeism very quickly become habitual as soon as the child reaches the third grade. A boy has of course a greater chance of continuing his education. In the first place, he has more free time, mainly because he is less burdened with household tasks than his sister, for such duties are given to women as a matter of course. Secondly, in many ethnic groups, a boy is thinking of joining the army; it offers the prospect of earning money, and families are frequently ready to make sacrifices in the expectation that when their son comes home some years later he will bring back money and jewellery and fabrics from abroad.'

Finally, a main reason for low participation is the inappropriateness of the school curriculum to the felt needs of the community.[4] Despite the fact that practically all pupils are from small farms and must later make their living through farming, the functional training content of the curriculum is minimal. Nor is the curriculum geared to foster an interest in or love for the land—quite the opposite.

1. Ta Ngoc Châu, 'A synthesis report of four country case studies' in *Population growth and costs of education in developing countries*, Paris, Unesco/IIEP, 1972.
2. Nadine Beauthéac, *Equality of access of women to education: Nepal*, Paris, Unesco, 1971 (mimeo).
3. *Equality of access of women to education*, op. cit., p. 17.
4. Ibid., p. 20.

TABLE 10. Enrolment flow grades I–V from 1966/67 to 1970/71 (retention rate)

Area	1966/67 grade I	1967/68 grade II	% grades I–II	1968/69 grade III	% grades I–III	1969/70 grade IV	% grades I–IV	1970/71 grade V	% grades I–V
A	484	393	81.2	382	78.9	346	71.5	326	67.4
B	160	132	82.5	128	80.0	96	60.0	87	54.4
C	221	181	81.9	149	67.4	143	64.7	127	57.5
D	179	156	87.2	150	83.8	126	70.4	108	60.3
E	118	95	80.5	85	72.0	77	65.3	64	54.2
F	75	67	89.3	58	77.3	52	69.3	48	64.0
G	131	108	82.4	97	74.0	93	71.0	90	68.7
H	172	161	93.6	142	82.6	138	80.2	129	75.0
I	75	61	81.3	58	77.3	56	74.7	49	65.3
J	77	67	87.0	57	74.0	53	68.8	50	64.9
K	134	124	92.5	118	88.1	109	81.3	104	77.6
L	120	102	85.0	99	82.5	94	78.3	92	76.7
M	77	71	92.2	63	81.8	52	67.5	48	62.3
N	113	110	97.3	104	92.0	90	79.6	86	76.1
O	166	118	71.1	96	82.8	87	52.4	80	48.2
TOTAL	2 302	1 946	84.5	1 786	77.6	1 612	70.0	1 488	64.6

4. Flow rates

A. FIRST LEVEL

Enrolment flow and retention rates by area from 1966/67 to 1970/71 are given in Table 10; the overall flow rate is shown in Table 11. It is seen that on average only about two-thirds of pupils admitted to grade I still remain for grade V. Thus, there is fairly heavy wastage which, when combined with the low participation rates already observed, constitutes a serious problem.

TABLE 11. Overall flow rate (promotion) grades I–V 1966/67 to 1970/71

Grade	I to II	II to III	III to IV	IV to V
1966/67				
1967/68	84.5			
1968/69		91.8		
1969/70			90.3	
1970/71				92.3

There is not much variation from the average rates throughout the district, with the exception of area O where larger drop-outs are indicated in grades IV and V. Areas H, K, L and N in contrast score above average retention rates. It may also be seen from Table 11 that the wastage has been relatively steady through all grades.

In the absence of district-wide data on repetition and drop-out rates, a sample survey for grades I–III in fifteen schools was made in this regard, details of which are included in the Appendix, Table 6. A certain pattern worth noting emerges. Thus, it is seen that somewhat more than one-quarter of grade I pupils fail their annual examination, causing four-fifths of these failures or one-fifth of all the grade to repeat. Significantly, however, one-third of those repeating drop out. While annual examination failures are much less in grades II and III, 6 and 9 per cent respectively, here again the drop-out among repeaters is heavy. This raises the question of the function of annual examination and repetition policies in such circumstances. But it is certain that there are many reasons for drop-out other than failure at examination and repetition, as suggested earlier when discussing participation. Some are indeed attributable to the school and others to environmental circumstances, but for lack of adequate data and innate complexity it is not possible to assess them further here.

B. SECOND LEVEL

Retention rates by area for the period 1966/67 to 1970/71 are shown in Table 12, and overall promotion rates are given in Table 13. The average retention rate is seen to be better than that at first level; just over 70 per cent of pupils admitted to the second level continue to the final grade of their course.

TABLE 13. Overall flow rate (promotion) grades VI–X from 1966/67 to 1970/71

Grade	VI to VII	VII to VIII	VIII to IX	IX to X
1966/67				
1967/68	89.7			
1968/69		89.7		
1969/70			97.3	
1970/71				94.7

Nevertheless, rates are erratic throughout the district. Particularly heavy wastage occurs in areas D, F, J, M and N. The extent to which this wastage is due to repetition or drop-out, or the reason for it, cannot be assessed for lack of data. It is noteworthy, however, that the weak rates recorded are for small middle schools in remote areas.

The sub-table shows relatively high overall promotion rates, with a notably high rate of 97.3 from grade VIII–IX, that is, from first to second stage in the pre-reform situation.

Data are not readily available for calculation of admission rates to the second level, but in view of the fact that levels are geared by target in the Education Plan at primary: middle: high = 5:2:1, it is useful to mention that the overall comparable ratio in 1971 was 4.0:2.3:1.

TABLE 12. Enrolment flow grades VI–X from 1966/67 to 1970/71 (retention rate)

Area	1966/67 grade VI	1967/68 grade VII	% grades VI–VII	1968/69 grade VIII	% grades VI–VIII	1969/70 grade IX	% grades VI–IX	1970/71 grade X	% VI to final grade
A	571	525	91.9	500	91.2	521	91.2	493	86.3
B	51	46	90.2	45	87.6	44	86.3	43	84.3
C	61	59	96.7	57	93.4	55	90.2	53	86.9
D	49	30	61.2	8	16.3	—	—	—	16.3
E	35	32	91.4	27	77.1	27	77.1	23	65.7
F	19	15	78.9	5	26.3	—	—	—	26.3
G	32	25	78.1	23	71.9	21	65.6	20	62.5
H	60	53	88.3	50	83.3	48	80.0	46	76.7
I	25	17	68.0	7	28.0	—	—	—	28.0
J	19	8	42.1	6	31.6	—	—	—	31.6
K	45	42	93.3	41	91.1	40	88.9	38	84.4
L	42	40	95.2	40	95.2	37	88.1	35	83.3
M	30	12	40.0	3	10.0	—	—	—	10.0
N	20	5	25.0	3	15.0	—	—	—	15.0
O	—	—	—	—	—	—	—	—	—
TOTAL	1 059	909	89.7	815	77.0	793	74.9	751	70.9

5. Origin of pupils

A. FIRST LEVEL

It may be deduced from Table 14, that 90 per cent of enrolled pupils live within thirty minutes' walking distance, or the equivalent of one mile, from their schools. Only one per cent, or eighty-seven pupils, live beyond one hour's walking distance and these are confined to just a few areas. Indeed, little above one per cent require more than forty-five minutes' walking time, the maximum generally acceptable, to get to their schools.

Thus, distance from the school may not be considered as a major problem. This is due to the habitation pattern whereby people are generally clustered close to fair-sized villages. However, classification by one mile or forty-five minutes' distance from school hides the difficult obstacles to be overcome (literally) by a great many pupils on their way to and from school. In a district of dramatically changing topography, many must make their way round difficult ledges, over fragile bridges, up steep hills and so on, before a mile 'as the crow flies' has been covered.

With regard to sociological origin, it is safe to say that outside of Pokhara, almost all pupils are the children of small farmers—in the capital, too, the majority have some association with the land. In this context it may also be added that the different tribes and religions mix easily without problems at school; nor is there any difficulty over dialect.

B. SECOND LEVEL

As shown in Table 15, 72.3 per cent of second-level pupils live within forty-five minutes' and 86.6 per cent within one hour's walking distance from school. It may be mentioned that 4.9 per cent, or 227 pupils, live more than one-and-a-half hours' travel time distant.

As for the first level, the high percentage within close range of school is striking but the same comments about terrain also hold true.

TABLE 14. Walking time taken by first-level pupils from home to school in 1971

Area	Less than 15 mins.		15–30 mins.		30–45 mins.		45–60 mins.		Over 60 mins.		Total pupils
	No.	%	No.	%	No.	%	No.	%	No.	%	
A	1 653	63.9	790	30.5	139	5.4	—	—	10	0.2	2 592
B	780	78.9	155	15.7	48	4.9	5	0.5	—	—	988
C	837	63.0	445	33.5	39	2.9	8	0.5	10	0.1	1 329
D	667	71.3	229	24.5	40	4.2	—	—	—	—	936
E	464	63.0	153	20.8	78	10.6	13	1.7	29	3.9	737
F	281	72.4	94	24.2	13	3.4	—	—	—	—	388
G	394	57.6	233	34.1	48	7.0	9	1.3	—	—	684
H	534	56.6	217	23.0	172	18.2	20	2.2	—	—	943
I	280	61.4	141	30.1	35	7.7	—	—	—	—	456
J	254	58.8	142	32.9	36	8.3	—	—	—	—	432
K	402	47.0	394	46.0	53	6.2	7	0.8	—	—	856
L	436	55.0	192	24.2	161	20.3	4	0.5	—	—	793
M	256	57.8	110	24.8	74	16.7	—	—	3	0.7	443
N	250	50.7	162	32.9	56	11.4	10	2.0	5	3.0	493
O	356	48.9	216	29.7	121	16.6	5	0.7	30	4.1	728
TOTAL	7 844	61.3	3 673	28.7	1 113	8.7	81	0.6	87	0.7	12 798

NOTE It may be taken that fifteen minutes' walking time is equivalent to 1/2 mile distance, thirty minutes to one mile, etc.

TABLE 15. Walking time taken by second-level pupils from home to school in 1971

Area	Less than 15 mins.		15 to 30 mins.		30 to 45 mins.		45 to 60 mins.		60 to 90 mins.		90 to 120 mins.		Total pupils
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
A	531	24.8	460	21.5	381	17.8	297	13.9	284	13.3	187	8.7	2 140
B	132	45.5	91	31.4	30	10.3	37	12.8	—	—	—	—	290
C	231	68.1	58	17.1	23	6.8	20	5.9	7	2.1	—	—	339
D	84	41.0	25	12.2	29	14.1	21	10.2	36	17.6	10	4.9	205
E	80	48.2	33	19.9	20	12.0	33	19.9	—	—	—	—	166
F	40	67.8	8	13.6	4	6.8	7	11.8	—	—	—	—	59
G	40	32.5	50	40.6	—	—	21	17.1	—	—	12	9.8	123
H	115	36.3	121	38.2	21	6.6	60	18.9	—	—	—	—	317
I	36	41.9	48	55.8	—	—	—	—	2	2.3	—	—	86
J	25	69.4	—	—	—	—	11	30.6	—	—	—	—	36
K	113	36.3	88	28.3	28	9.0	59	19.0	23	7.4	—	—	311
L	79	26.4	76	25.4	63	21.1	44	14.7	29	9.7	8	2.7	299
M	40	34.5	18	15.5	13	11.2	24	20.7	11	9.5	10	8.6	116
N	11	32.4	4	11.8	—	—	19	55.8	—	—	—	—	34
O	30	54.5	21	38.2	4	7.3	—	—	—	—	—	—	55
TOTAL	1 587	34.7	1 101	24.1	616	13.5	653	14.3	392	8.5	227	4.9	4 576

6. Teaching staff and curriculum

A. FIRST LEVEL

Teaching staff, pupil/teacher ratio and percentage untrained teachers are shown by catchment area and school size in Table 16.

The very high instance of untrained teachers is at once noticeable; 63.9 per cent or almost two-thirds of the 457 teachers employed in first-level education in Kaski are untrained. It is noteworthy that untrained teachers are spread to a greater extent among larger schools; 73 or 69 per cent of teaching staff in schools above enrolment size of 125 are untrained, whereas 214 or 61 per cent of teachers in schools below this size are not trained. The higher proportion of untrained teachers in the larger schools is probably due to the general shortage of teachers and, with more rapid enrolment growth in the bigger centres, more people without training are being employed.

Utilization of teachers as shown by the pupil/teacher

TABLE 16. First-level teaching staff ratios by area and school size in 1971

Area		0/25	26/50	51/75	76/125	126/175	176/225	226+	Total
A	a				5	40	30		75
	b				17.6	30.9	42.3		34.6
	c				60.0	65.0	70.0		65.3
B	a		2	3	12	4		6	27
	b		23.5	44.0	32.5	42.5		41.5	36.6
	c		50.0	66.6	50.0	75.0		83.3	74.1
C	a		6	13	18	7			44
	b		23.3	26.6	31.4	39.5			30.2
	c		33.3	69.2	61.1	71.4			66.1
D	a		10	8	15				33
	b		20.2	23.5	36.4				28.4
	c		60.0	62.5	53.3				57.6
E	a	1	10	3	13				27
	b	13.0	22.9	44.3	27.8				27.3
	c	100.0	30.0	100.0	84.6				66.7
F	a	2		3	13				18
	b	8.5		18.6	24.2				21.5
	c	50.0		66.7	53.8				55.7
G	a		17	6	7				30
	b		16.5	29.8	32.0				22.8
	c		88.2	16.7	42.9				63.3
H	a		9	10	10		8		37
	b		19.5	19.8	35.0		27.4		25.5
	c		44.4	40.0	10.0		75.0		40.6
I	a		2	7	8				17
	b		21.0	28.0	27.2				26.6
	c		50.0	42.9	12.5				29.4
J	a		6	7		5			18
	b		18.8	22.8		31.8			24.0
	c		66.7	71.4		80.0			72.2
K	a		6	13	18				37
	b		21.1	21.3	25.1				23.1
	c		33.3	69.2	72.2				64.9
L	a	4	12	8	7				31
	b	4.7	20.6	22.6	49.4				25.6
	c	75.0	83.3	87.5	42.9				74.2
M	a			6	7				13
	b			31.8	36.0				34.1
	c			66.7	59.1				61.5
N	a		2	4	7	6			19
	b		18.5	34.5	27.7	21.3			25.9
	c		100.0	75.0	100.0	66.7			84.2
O	a		6	15	10				31
	b		16.5	20.6	31.9				23.5
	c		33.3	66.7	90.0				67.7
TOTAL	a	7	88	106	150	62	38	6	457
	b	7.0	19.6	25.3	30.8	31.8	39.2	41.5	28.3
	c	71.4	59.1	61.3	61.3	66.1	71.1	83.3	63.9

NOTES a = Teachers; b = Pupil/teacher ratio; c = Percentage of untrained teachers

TABLE 17. First-level teaching staff in 1971 by level of training

Area	With SLC[1]			Without SLC				
	Trained	Untrained	% with SLC %	Trained	Untrained	Total untrained	% untrained	Total teachers
A	16	23	52	10	26	49	65	75
B	—	6	22	7	14	20	74	27
C	—	7	16	15	22	29	66	44
D	6	4	30	8	15	19	58	33
E	6	5	41	3	13	18	67	27
F	2	4	33	6	6	10	56	18
G	2	7	30	9	12	19	63	30
H	13	3	43	9	12	15	41	37
I	3	3	35	9	2	5	29	17
J	—	4	22	5	9	13	72	18
K	2	9	30	11	15	24	65	37
L	3	8	26	5	18	23	74	31
M	3	3	46	2	5	8	62	13
N	2	3	26	1	13	16	84	19
O	1	6	23	9	15	21	68	31
TOTAL	59	92	33	109	197	289	63	457

1. School Leaving Certificate.

ratio tends on average to increase with size of school. Schools below enrolment size of seventy-five have an average pupil/teacher ratio lower than the minimum norm of thirty, while only those few schools above 225 in enrolment have an average pupil/teacher ratio above the maximum norm of forty.

The average pupil/teacher ratio for the district at 28.3 is somewhat below the minimum norm. This is caused, however, by the low ratio of 19.2 for the forty-six small remote schools below fifty in enrolment.[1]

From the breakdown of teaching staff by their level of education, as given in Table 17, it is seen that only one-third of all teachers have obtained the School Leaving Certificate (SLC) and that, of these, just 39 per cent are trained. Here, it may also be seen that, of the two-thirds teaching staff not having the SLC (306), only 36 per cent are trained. Thus, not only is the high instance of untrained teachers in Kaski a serious problem, but the general standard of education of those entering the profession is also a cause for disquiet.

With the possible exception of A, these problems are equally serious for all catchment areas, with B, C, J, L, N and O particularly badly affected.

B. SECOND LEVEL

Data on teaching staff by school size and area are given in Table 18. Of the 248 teachers employed for an enrolment of 4,576 pupils, 197 or 79.4 per cent are not trained; the

1. See Appendix, Table 5.

TABLE 18. Second-level teaching staff ratios by area and school size in 1971

School size		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total	P/T
0–50	Teachers	6	3	—	—	5	—	—	9	3	5	2	4	—	4	—	41	7.6
	Enrolment	40	37	—	—	62	—	—	66	34	36	36	44	—	34	—	389	
51–100	Teachers	18	3	—	11	—	4	—	—	3	—	6	13	6	—	3	67	14.8
	Enrolment	226	53	—	205	—	59	—	—	52	—	93	133	116	—	55	992	
101–150	Teachers	10	—	6	—	10	—	7	—	—	—	—	8	—	—	—	41	18.4
	Enrolment	110	—	112	—	104	—	123	—	—	—	—	122	—	—	—	571	
151–200	Teachers	18	8	—	—	—	—	—	—	—	—	9	—	—	—	—	35	20.1
	Enrolment	320	200	—	—	—	—	—	—	—	—	182	—	—	—	—	702	
201–250	Teachers	—	—	10	—	—	—	—	—	—	—	—	—	—	—	—	10	22.7
	Enrolment	—	—	227	—	—	—	—	—	—	—	—	—	—	—	—	227	
251–300	Teachers	—	—	—	—	—	—	—	11	—	—	—	—	—	—	—	11	22.8
	Enrolment	—	—	—	—	—	—	—	251	—	—	—	—	—	—	—	251	
300 +	Teachers	43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43	33.6
	Enrolment	1 444	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 444	
TOTAL	Teachers	95	14	16	11	15	4	7	20	6	5	17	25	6	4	3	248	
	Trained	28	2	2	—	1	—	1	8	2	1	3	1	2	—	—	51	
	Untrained	67	12	14	11	14	4	6	12	4	4	14	24	4	4	3	197	
	Enrolment	2 140	290	339	205	166	59	123	317	86	36	311	299	116	34	55	4 576	
	P/T	22.5	20.7	21	18.6	11.1	14.7	17.6	15.8	14.3	7.2	18.3	12.0	19.3	8.5	18.3	18.5	

P/T = Pupil/teacher ratio

TABLE 19. Qualifications of second-level teaching staff, 1971

Area	Trained teachers						Untrained teachers						Grand total
	Under SLC	SLC	IA	BA	MA	Total	Under SLC	SLC	IA	BA	MA	Total	
A	—	2	10	14	2	28	8	9	26	16	8	67	95
B	—	1	1	—	—	2	1	7	2	2	—	12	14
C	1	—	—	1	—	2	2	5	3	4	—	14	16
D	—	—	—	—	—	—	2	5	4	—	—	11	11
E	—	—	—	1	—	1	1	8	4	1	—	14	15
F	—	—	—	—	—	—	—	3	1	—	—	4	4
G	—	—	1	—	—	1	—	—	3	2	1	6	7
H	—	—	6	1	1	8	—	4	2	3	3	12	20
I	—	—	1	1	—	2	—	4	—	—	—	4	6
J	—	1	—	—	—	1	—	4	—	—	—	4	5
K	—	—	2	1	—	3	1	7	2	4	—	14	17
L	—	—	1	—	—	1	2	16	2	3	1	24	25
M	—	1	1	—	—	2	1	1	2	—	—	4	6
N	—	—	—	—	—	—	1	2	1	—	—	4	4
O	—	—	—	—	—	—	—	3	—	—	—	3	3
TOTAL	1	5	23	19	3	51	19	78	52	35	13	197	248

NOTE SLC = School Leaving Certificate; IA = Intermediate Arts (two years' college after high school graduation); BA = Bachelor of Arts (4 years after graduation); MA = Master of Arts (six years after graduation).

overall pupil/teacher ratio is 18.5. Thus, the problem of untrained teachers is even more serious than at the first level and the average pupil/teacher ratio is well below the norm of 25.[1]

The instance of untrained teachers is extremely high in all areas, though areas A (Pokhara) and H are relatively better off. Further details of the qualifications of teaching staff are given in Table 19. Here it is seen that all but one of the qualified teachers have the School Leaving Certificate (SLC), whereas nineteen of the untrained teachers do not have this qualification.

On the utilization of teaching staff, as shown by the pupil/teacher ratio, no area reaches the norm of twenty-five; six areas (E, F, I, J, L, N) have ratios below fifteen. The trend highlighted in the table of increased utilization of teachers with size of school is very striking; all schools below 100 enrolment have pupil/teacher ratios below fifteen and the bigger schools above 300 with a ratio of 33.6 are well beyond the norm.

Table 20 shows a typical breakdown for the curriculum at the second level.

TABLE 20. Percentage of time devoted to general and special subjects at the second level

	Middle school	High school			
		General		Vocational	
	VI–VIII	IX	X	IX	X
General subjects: (Languages, mathematics, health and physical education, etc.)	55	60	65	35	45
Special subjects: (Science, vocational subjects, etc.)	45	40	35	65	55

While a fairly reasonable balance between the time devoted to general as against vocational subjects is shown here for the high schools, it seems as if a greater proportion of time could be devoted to vocational subjects in middle schools. But it must be mentioned that success depends a great deal on other factors apart from this proportion, such as teaching methods and the prestige of some subjects. It is generally accepted that the curriculum and teaching methods must be more closely aligned to the manpower and social needs of the community.

7. School buildings and equipment

A. FIRST LEVEL

Distribution of schools by size is shown in Table 21, and distribution of enrolment within these schools is illustrated in Figure 3. It is obvious that there is a network of very small schools; 120 of the total of 160 are below enrolment size 100 and these cater for 55.4 per cent of total enrolment. This is significant in view of the reform to a '3-4-3' system, since enrolment size 100 constitutes about the size required to cater ideally for a single-stream three-grade establishment. It appears, however, that if equalization of opportunity is to be pursued, many schools must remain below this size for some time to come.

A picture of the standard accommodation in the schools is given in Table 22. Of the total, 126 are made of clay-brick; the remainder are mud-built. Half have roofs of straw or corrugated sheets and are mainly just open cottages. Although this picture appears gloomy, nevertheless, because of the agreeable nature of the climate for the major part of the year, these poor accommodation standards are not necessarily major obstacles to good standards of teaching.

1. Though the teachers are not trained, it must be mentioned that the level of qualifications is relatively high.

TABLE 21. First-level schools by size in 1971

Area	0–25		26–50		51–75		76–100		101–125		126–150		151–175		176–200		201–225		226–250		Total	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
A							1	88			2	272	6	963	1	195	5	1 074			15	2 592
B			1	47	2	132	3	272	1	118			1	170					1	249	9	988
C			3	140	6	346	4	350	2	216	2	277									17	1 329
D			5	202	3	188	5	437	1	109											14	936
E	1	13	5	229	2	133	3	258	1	104											12	737
F	1	17			1	56	2	191	1	124											5	388
G			8	281	3	179			2	224											13	684
H			3	176	3	198			3	350							2	219			11	943
I			1	42	3	196			2	218											6	456
J			3	113	3	160							1	159							7	432
K			4	127	5	277	4	348	1	104											14	856
L	1	19	6	247	3	181	3	240	1	106											14	793
M					3	191	3	252													6	443
N			1	33	2	138	1	84	1	110	1	128									6	493
O			3	99	5	310	1	87	2	232											11	728
TOTAL	3	49	43	1 736	44	2 685	30	2 607	18	2 015	5	677	8	1 292	1	195	7	1 293	1	249	160	12 798

I = Number of schools; II = total enrolment.

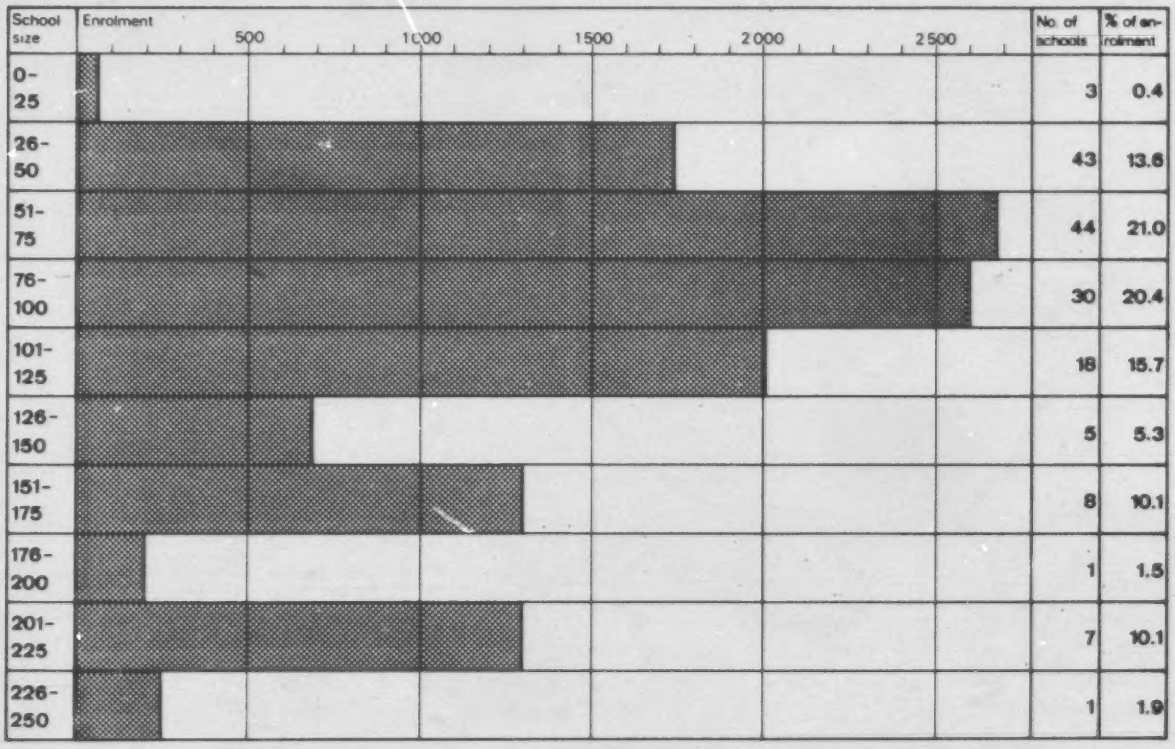


FIGURE 3. *First-level schools by size of enrolment, 1971*

TABLE 22. School premises and land in 1971

	Building						Accommodation									
	Structure		Roof				Teaching				Non-teaching		Playground		School land in *bighas*[2]
	Pucca	Mud-built	Tile	R.C.C. and R.B.C	Straw	Corrug. sheet	Class-rooms	Sq. ft.	Sq. ft. per pupil	SUR %[1]	Rooms	Sq. ft.	Yes	No	
A	10	5	—	—	—	10	26	9 590	3.4	351	5	1 590	9	6	—
B	8	1	—	—	2	7	20	7 415	7.5	173	7	1 281	7	2	11.7
C	6	11	—	—	11	6	64	13 534	10.2	128	...	1 087	15	2	6.6
D	12	2	—	2	6	4	42	8 146	8.7	149	15	2 693	9	5	3.3
E	8	4	4	2	6	4	27	7 432	10.1	129	...	360	5	7	0.5
F	5	—	—	2	—	3	19	8 426	21.7	60	4	1 071	2	3	—
G	9	4	—	—	4	8	19	6 354	9.3	140	1	150	7	6	9.1
H	9	2	—	6	2	3	25	6 768	7.2	181	5	1 253	9	2	0.7
I	6	—	—	6	—	—	13	2 895	6.3	204	1	60	6	—	0.7
J	7	—	—	5	—	—	13	2 750	6.4	204	5	1 129	6	1	3.6
K	11	3	—	—	4	1	29	8 119	9.5	137	6	847	8	6	6.6
L	14	—	—	—	—	—	48	10 329	13.0	100	3	541	10	4	3.4
M	6	—	—	—	—	—	21	4 767	10.8	121	2	412	3	3	4.1
N	5	1	—	—	1	—	23	3 784	7.7	169	1	428	6	—	1.5
O	10	1	—	—	—	—	38	5 842	8.0	162	2	411	10	1	6.5
	126	34	4	24	36	46	427	106 151	8.3	157	...	13 313	112	48	58.3

NOTES Pucca = clay brick
R.C.C. = rod, clay and cement
R.B.C. = rod, brick and cement
... Information not available

1. SUR = space utilization rate, i.e. percentage of pupil-places available which are actually used; the average figure of thirteen square feet is taken as the norm for a pupil-place.
2. 1 *bigha* = 1.7 acres.

More seriously perhaps, one-quarter of the schools have no adjoining land for experimentation plots or playground, or indeed as a source of school income. Then again, as the table shows, there is a very high level of over-utilization of accommodation in many instances, although it should be mentioned that the standard of thirteen square feet per pupil-place as a basis for measurement of utilization rate may be rather high in these circumstances. However, even with lesser areas per pupil, there is obviously a serious shortage of accommodation, especially in areas A, B, H, I, J and N.

At the present standard of classroom supply, then, it is not surprising that there is not much provision of non-teaching accommodation. It may be added that there is a great shortage also of even minimal teaching aids in many cases.

B. SECOND LEVEL

The size pattern of second-level schools is shown in Table 23. There are only five schools with enrolment above 200 and three of these are fairly big establishments in Pokhara,

TABLE 23. Second-level schools by size in 1972

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total
0–50	Schools	1	1	—	—	2	—	—	2	1	1	1	1	—	1	—	11
	Enrolments	40	37	—	—	62	—	—	66	34	36	36	44	—	34	—	389
51–100	Schools	3	1	—	3	—	1	—	—	1	—	1	2	2	—	1	15
	Enrolments	226	53	—	205	—	59	—	—	52	—	93	133	116	—	55	992
101–150	Schools	1	—	1	—	1	—	1	—	—	—	—	1	—	—	—	5
	Enrolments	110	—	112	—	104	—	123	—	—	—	—	122	—	—	—	571
151–200	Schools	2	1	—	—	—	—	—	—	—	—	1	—	—	—	—	4
	Enrolments	320	200	—	—	—	—	—	—	—	—	182	—	—	—	—	702
201–250	Schools	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	Enrolments	—	—	227	—	—	—	—	—	—	—	—	—	—	—	—	227
251–300	Schools	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Enrolments	—	—	—	—	—	—	—	251	—	—	—	—	—	—	—	251
300 +	Schools	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	Enrolments	1 444	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 444
TOTAL	Schools	10	3	2	3	3	1	1	3	2	1	3	4	2	1	1	40
	Enrolments	2 140	290	339	205	166	59	123	317	86	36	311	299	116	34	55	4 576

the capital. The remaining thirty-five are mainly small, scattered and rural. Though ideally, 100 should constitute the minimum size for a middle school that will suit the four grades (IV–VII) and accommodate an average of twenty-five per grade, it may be seen that there are twenty-six schools with lesser enrolment. To achieve certain reform objectives having a social basis, it is obvious that many of the smaller schools must remain in the network despite the fact that these establishments are less economical, having particularly low pupil/teacher ratios, as was seen in an earlier section.

Classroom accommodation and equipment, while generally of a better standard than that seen at the first level, is still rather modest. More land is also generally available at second-level schools.

8. Costs and financing

A. FIRST LEVEL

Total expenditure for 1971 is shown in Table 24. Capital expenditure at Rs.23,600 amounted to 4.3 per cent of an overall expenditure outlay of Rs.552,200.[1]

Only a small percentage of total expenditure went on capital costs in all areas with the exception of A and O where Rs.15,000, or about two-thirds of the full capital outlay for 1971, was spent.

Teacher cost accounted for 95.4 per cent of total re-

1. At the time of writing in July 1973 the exchange rate was U.S. $1 = 10.56 Nepalese rupees.

TABLE 24. Total expenditure on first-level education by area for 1971 (thousands of Nepalese rupees, current prices)

	Recurrent cost					Capital cost				
Area	Teacher cost	Scholarships and prizes	Misc.	Total recurrent costs	Teacher cost % recurrent cost	Construction	Land purchase etc.	Total capital cost	Total cost: recurrent and capital	Recurrent cost % of total cost
A	92.1	7.8	4.1	104.0	88.6	6.5	1.1	7.6	111.6	93.2
B	26.6	0.2	0.9	27.7	96.0	0.6	0.1	0.7	28.4	97.5
C	74.7	0.1	1.9	76.7	97.4	—	0.3	0.3	77.0	99.6
D	42.1	0.3	1.2	43.6	96.6	1.2	0.4	1.6	45.2	96.5
E	23.6	—	0.6	24.2	97.5	0.2	0.7	0.9	25.1	96.4
F	16.3	—	0.4	16.7	97.6	—	0.4	0.4	17.1	97.7
G	20.2	0.1	0.5	20.8	97.1	—	0.3	0.3	21.1	98.6
H	27.9	0.1	0.5	28.5	97.9	0.9	0.4	1.3	29.8	95.6
I	24.3	—	0.3	24.6	98.8	—	0.1	0.1	24.7	99.6
J	21.0	0.1	0.5	21.6	97.2	—	0.1	0.1	21.7	99.5
K	37.2	—	1.0	38.2	97.4	0.2	—	0.2	38.4	99.5
L	31.3	—	0.8	32.1	97.5	—	0.4	0.4	32.5	98.8
M	16.0	—	0.4	16.4	97.6	0.8	0.6	1.4	17.8	92.1
N	20.5	0.4	1.0	21.9	93.6	0.9	—	0.9	22.8	96.1
O	30.4	0.2	1.0	31.6	96.2	7.3	0.1	7.4	39.0	81.0
TOTAL	504.2	9.3	15.1	528.6	95.4	18.6	5.0	23.6	552.2	95.7

TABLE 25. Unit cost per pupil and per teacher for first-level education in 1971 (recurrent cost only in Nepalese rupees, current prices).

		Unit cost per pupil					
Area	Enrolment	For teachers	For non-teacher expenditure	Total recurrent unit cost	Average salary per teacher	Teachers	P/T ratio
A	2 592	35.5	4.6	40.1	1 228.0	75	34.6
B	988	26.9	1.1	28.0	985.2	27	36.6
C	1 329	56.2	1.5	57.7	1 697.7	44	30.2
D	936	45.0	1.6	46.6	1 275.8	33	28.4
E	737	32.0	0.8	32.8	874.1	27	27.3
F	388	42.0	1.0	43.0	905.6	18	21.5
G	684	29.5	0.9	30.4	673.3	30	22.8
H	943	29.6	0.6	30.2	754.1	37	25.5
I	456	53.3	0.6	53.9	1 429.4	17	26.8
J	432	48.6	1.4	50.0	1 166.7	18	24.0
K	856	43.5	1.1	44.6	1 005.4	37	23.1
L	793	39.5	1.0	40.5	1 009.7	31	25.6
M	443	36.1	0.9	37.0	1 230.8	13	34.1
N	493	41.6	2.8	44.4	1 078.9	19	25.9
O	728	41.8	1.6	43.4	980.6	31	23.5
TOTAL	12 798	39.4	1.9	41.3	1 103.3	457	28.3

TABLE 26. Total financing by area and source in 1971 (thousands of Nepalese rupees, current prices)

Area	Public financing: Govt.	Public financing: Local authority		Public financing		Private financing					Total public and private finance	% public of total finance
	Central grant	Local authority education tax	District *panchayat* grant	Total public finance	% Govt. of public finance	Fees	Land income	Other savings etc.	Volunt. labour	Total private finance		
A	33.5	50.1	28.5	112.1	29.9	3.3	—	3.0	—	6.3	118.4	94.7
B	9.9	—	—	9.9	100.0	2.4	17.4	1.2	—	21.0	30.9	32.0
C	52.8	2.7	0.1	55.6	95.0	2.1	12.5	7.8	—	22.4	78.0	71.3
D	24.6	—	—	24.6	100.0	1.6	11.7	2.1	8.2	23.6	48.2	51.0
E	11.3	—	—	11.3	100.0	1.7	12.5	2.1	—	16.3	27.6	40.9
F	12.1	—	—	12.1	100.0	1.0	—	5.9	—	6.9	19.0	63.7
G	8.7	3.4	0.1	12.2	71.3	1.2	6.8	1.0	—	9.0	21.2	57.5
H	18.7	—	—	18.7	100.0	0.8	5.2	4.7	2.3	13.0	31.7	59.0
I	14.3	—	—	14.3	100.0	—	11.6	0.3	—	11.9	26.2	54.6
J	14.3	—	—	14.3	100.0	0.1	15.3	0.1	—	15.5	29.8	48.0
K	17.6	—	—	17.6	100.0	1.8	13.7	4.8	0.7	21.0	38.6	45.6
L	14.3	—	—	14.3	100.0	1.1	14.6	6.4	—	22.1	36.4	39.3
M	12.4	2.5	5.4	20.3	61.1	2.4	2.7	2.0	0.9	8.0	28.3	71.7
N	7.7	4.1	—	11.8	65.3	2.2	5.0	4.8	—	12.0	23.8	49.6
O	16.8	—	—	16.8	100.0	3.5	8.7	3.7	9.1	25.0	41.8	40.2
TOTAL	269.0	62.8	34.1	365.9	73.5	25.2	137.7	49.9	21.2	234.0	599.9	61.0

current cost of Rs.528,600 for the district. A correspondingly low percentage was devoted to non-teacher costs in all areas with the exception of A where 11.4 per cent of recurrent outlay went on non-teaching costs, mainly on scholarships and prizes.

Unit costs per pupil and per teacher are shown in Table 25. The average unit recurrent cost per pupil is Rs.41.3, comprising Rs.39.4 teacher and Rs.1.9 non-teacher cost per pupil.

Again there is a very wide range in unit costs between areas, from Rs.28.0 in B to 57.7 in C. This gap is accounted for mainly by the correspondingly wide range in average salary per teacher (also shown in Table 25), in addition, of course, to lower pupil/teacher ratios.

Total financing by area and source in 1971 is shown in Table 27. Public financing is seen to play an important role, representing 61 per cent of the total of Rs.599,900. The proportion of financing is shown in Table 26.

TABLE 27. The proportion of financing first-level education, 1971

	Percentage
Public	
Government	44.6
Local authority	16.2
TOTAL	61.0
Private	
Land income	23.4
Donations, etc.	7.8
Fees	4.3
Voluntary help	3.5
TOTAL	39.0

Local authority financing, however, was confined to the areas A, C, G, M, and N in 1971.

There is a wide range, too, in the level of importance of public financing between areas, from as low as 32 per cent in B to as high as 94.7 in A. Private financing, while representing 39 per cent of overall financing, is still the source of more than 50 per cent of the funds for the seven areas B, E, J, K, L, N and O.

TABLE 28. Breakdown of private financing sources in 1971

	Amount (thousands of Rs.)	Percentage
Fees[1]	25.2	10.8
Land income	140.5	60.0
Other	47.1	20.1
Voluntary labour	21.2	9.1
TOTAL	234.0	100.0

1. Average annual fee per pupil in 1971 was Rs.2.

From Table 28, the overall importance of income from land is immediately striking. This source of income is quite important in all areas (except A) and is particularly so in B, E, G, I and J.

A more detailed view of the comparative allocation and use of funds is shown in the Appendix, Table 8, where unit financing per pupil by area is given. The variation in financing structure shown as follows is noteworthy:

Unit financing per pupil:

	Government	*Local authority*	*Private*	*Total*
Rupees	21.0	7.6	18.3	46.9
Percentage	44.8	16.2	39.0	100.0

In this regard, it must be mentioned that B, G, H and L fare badly in receipt of public funds per pupil.

B. SECOND LEVEL

Exact details of expenditure and financing of second-level education in the District of Kaski were not readily avail-

able. However, the data given below are from a recent case study[1] on the financing of education in Nepal, and are considered to be close to those pertaining in the district (1969/70):

i. Expenditure breakdown: salaries and allowances, 83.4 per cent; scholarships, 0.4 per cent; materials and supplies, 1.5 per cent; other, 14.7 per cent.
ii. Unit cost per pupil: teacher cost, Rs.147.97; non-teacher cost, Rs.29.45; total unit cost, Rs.177.42.
iii. Financing by source: government grant, 10.8 per cent; tuition fees, 36.5 per cent; land, 25.4 per cent; other, 27.3 per cent.
iv. Unit financing per pupil: public, Rs.22.75; private, Rs.185.65; total, Rs.210.40.
v. Average salary: Rs.2,663.

In making comparisons with the first level, it will be noticed that non-teacher cost was much more important at the second level and represented 16.6 per cent of total outlay. Unit cost per pupil at Rs.177.42 is also much greater than the average Rs.41.3 for the first level.

Again, government financing at 10.8 per cent constituted the only public financing, as no local authority grants were available. This contrasts also with the first level where outlay was 44.8 per cent financed by the government and 16.2 per cent by the local authority. Obviously there was a heavy reliance at the second level on tuition fees, income from land and other private sources. It must be mentioned here, however, that major reforms are also being introduced in financing of the second level with the implementation of the education plan, as will be seen in a later chapter. Unit financing per pupil in 1969/70 was Rs.210.40; the fact that this figure is somewhat higher than the unit cost of Rs.177.42 is probably accounted for by the non-disbursement of certain funds while awaiting the completion of projects.

9. General diagnosis

A. FIRST LEVEL

The network of 160 mainly rural first-level schools was developed rapidly and rather haphazardly over the last twenty-five years in a district which, because of the rugged nature of its topography, has tremendous communications problems. As many as 120 of the schools are below 100 in enrolment size and there are forty-six remote schools of less than fifty pupils. Erected almost completely by the people themselves, these schools are very modest in accommodation and one-quarter have no adjoining land.

Nevertheless, enrolment has increased by a remarkable 49 per cent to 12,798 from 1966/67 to 1970/71. While participation is still too low for satisfaction, especially that for girls, it is, however, relatively good and the national target of 64 per cent (at an apparent participation rate) for the 6–8-year-old age-group is already surpassed if kindergarten-III are included in the reckoning. Although 90 per cent of pupils enrolled are within thirty minutes' walking distance of their schools, children still have very great economic, social, environmental and communications obstacles to overcome in order to attend. Very high wastage is experienced also—less than two out of every three pupils admitted to grade I will continue to grade V.

It is found that two-thirds of the teachers in the schools are not trained. Nor are teaching resources well utilized—the minimum norm of 30:1 for the pupil/teacher ratio is not reached and the average ratio for the forty-six small schools below fifty enrolment is 19.2:1.

The total annual recurrent cost for first-level education in 1971 was Rs.528,600 or Rs.41.3 per pupil. Of the total sum, 95.4 per cent was spent on teachers. These costs are financed in the following manner: *Public*, government, 44.8 per cent; local authority, 16.2 per cent; *Private*, land income, 23.4 per cent; donations, etc., 7.8 per cent; fees, 4.3 per cent; voluntary help, 3.5 per cent.

B. SECOND LEVEL

This, too, is a network of small, scattered schools with the exception of a few big schools in Pokhara. Indeed, the capital plays a dominant role and accounts for 47 per cent of second-level pupils. There are twenty-six establishments of less than 100 enrolment throughout the district.

Percentage of girls enrolled is also very low at the second level—an average of 12 per cent. But the retention rate is better than at the first level; 70 per cent of those admitted continue to the final grade. Again a high proportion of pupils enrolled live close to their schools; 72.3 per cent are within forty-five minutes' walking distance.

However, four-fifths of teachers are untrained. The average pupil/teacher ratio at 18.5:1 is well below the norm of 25:1. This ratio is below 15:1 for all schools less than 100 in enrolment. Thus, there is also at the second level a costly uneconomical utilization of teachers.

10. Conclusion

The questions which must now be faced in making proposals for the development of the first- and second-level schools' network in the light of these findings are:

(*a*) How can the structural reform '5-3-2' to '3-4-3' be best phased into the existing network without over-disruptive economic, social, pedagogical or administrative effects?
(*b*) How far is it possible to surpass the national target of 64 per cent participation for the 6–8 age-group throughout the district; or what is the most realistic horizon year to reach the target of universal primary education for this age-group?
(*c*) To what extent will the weaknesses discovered—particularly the very low participation rate for girls, heavy wastage, big instance of untrained teachers, uneconomical utilization of teachers, among others—hinder the implementation of the reform?
(*d*) Is achievement of the reform objectives physically and financially feasible?

But first, it is necessary to have a more profound look at the economic and social background of the district and the people whom the schools are meant to serve.

1. N. R. Padhye, *Financing first-level and second-level education in Nepal*, Paris, Unesco/IIEP (to be published).

III. Development perspective

1. General

In this chapter, attention will be focused on the economic, social and demographic context within which the school network must be developed. This is done not only for the purpose of having a rational basis for making enrolment projections but also because of an awareness that the school network should be geared to likely economic and social developments in the district, being at once a cause and a consequence of such development.

Indeed, rational projection of enrolment at the first level in both the short and medium terms depends very significantly upon demographic trends and rates of participation of the age-groups concerned. While enrolment at the second level in the medium term is also very heavily dependent on these factors, that for the short term depends rather more closely upon existing first-level enrolments.[1]

Thus, since population trends play such a significant role in the estimation of enrolments, it follows that some demographic analysis for the district must be made. But population trends, in turn, are very closely related to economic and social development. Accordingly, it is appropriate to start with an examination of these problems.

Following examination, then, of the economic and social problems of Kaski, a brief look is taken at the wider regional planning strategy of Nepal (which will certainly influence future developments in the area under study) before making a certain demographic analysis of the district in the concluding part of the chapter.

2. Economic and social development problems

A. TOPOGRAPHY AND NATURAL RESOURCES

The wide range in elevation of the District of Kaski is well illustrated in Maps 4 and 5, where the sharp south-north incline to 24,000 feet (7,200 metres) for an area of 503 square miles is most striking. There is little habitation above 8,000 feet and it will be found useful to differentiate between the 'valley' (0–4,000 feet) and 'hilly' areas (4,000–8,000 feet) in comparing their respective economic and social problems.[2]

The valley area is located at the base of the Annapurna Himalayan range whose reflections in the Phewa and other lakes make a phenomenon of rare scenic beauty. The Seti river runs through the heart of the valley often forming gorges to a depth of 150 feet.

The climate is sub-tropical in the valley and sub-alpine in the hilly areas. Average annual rainfall recorded at the meteorological station in the capital, Pokhara, is 3,511.8 mm, of which 3,071.6 (87.5 per cent) falls between June and November. Normal air temperature recorded ranges from 13.1°C in January to 25.8°C in June with a mean yearly figure of 20.8°C.[3] The Himalayan range diverts the south-west monsoon causing extreme dryness in the northern part of the district.

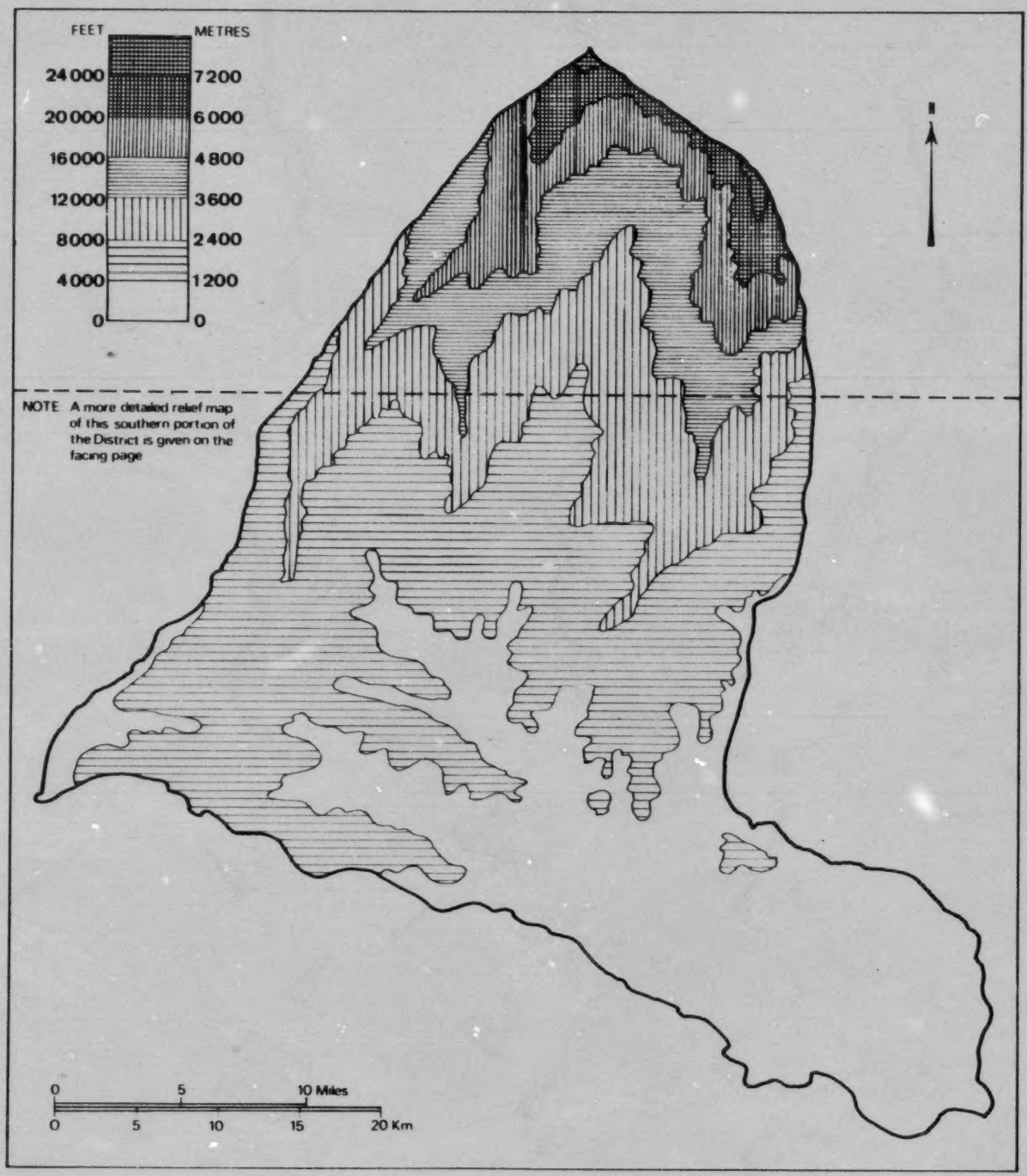
Unexploited mineral resources certainly exist and exploration is being increased. Some cobalt, copper, sulphur and basalt is mined and limestone, marble and slate are quarried in the district. There is also a possibility that a cement industry may be developed here.

Soil in the valley areas may be generally classified as lacustrine with top clay, which type is second only in importance to the alluvial soil of the Terai, and is suitable for the growing of paddy, wheat, maize, potato and vegetables.[4] Vegetation of the valley areas may be classified as 'lower monsoon (wet monsoon) forest' and of the hilly areas as 'middle monsoon (dry deciduous monsoon) forest'.[5]

B. GENERAL PROBLEMS

About 92 per cent of the population are engaged in a subsistence-type agriculture still practised mainly with antiquated methods. The food-deficit hilly areas are rather

1. Ta Ngoc Chau, 'Synthesis report ...' in *Population growth and costs of education in developing countries*, op. cit.
2. It must be mentioned that the terms 'valley' and 'hilly' are special to the Nepal case and are hardly adequate to describe the great elevations involved which are clearly highlighted in Maps 4 and 5.
3. K. B. Rajbandary, *Natural environment and crop distribution in Nepal*, Kathmandu, R. N. Adhikari, 1968, pp. 12 and 14.
4. Ibid., p. 16.
5. Dibya Deo Bhatt, *Natural history and economic botany of Nepal*, Kathmandu, HMG Press, 1970, p. 31. (Quoting L. Swan and A. Leviton, 1962 'The Herpetology of Nepal', Proc. Cal. Acad. Sci. Series IV, pp. 103–147).



MAP 4. *Physical relief of the District of Kaski*

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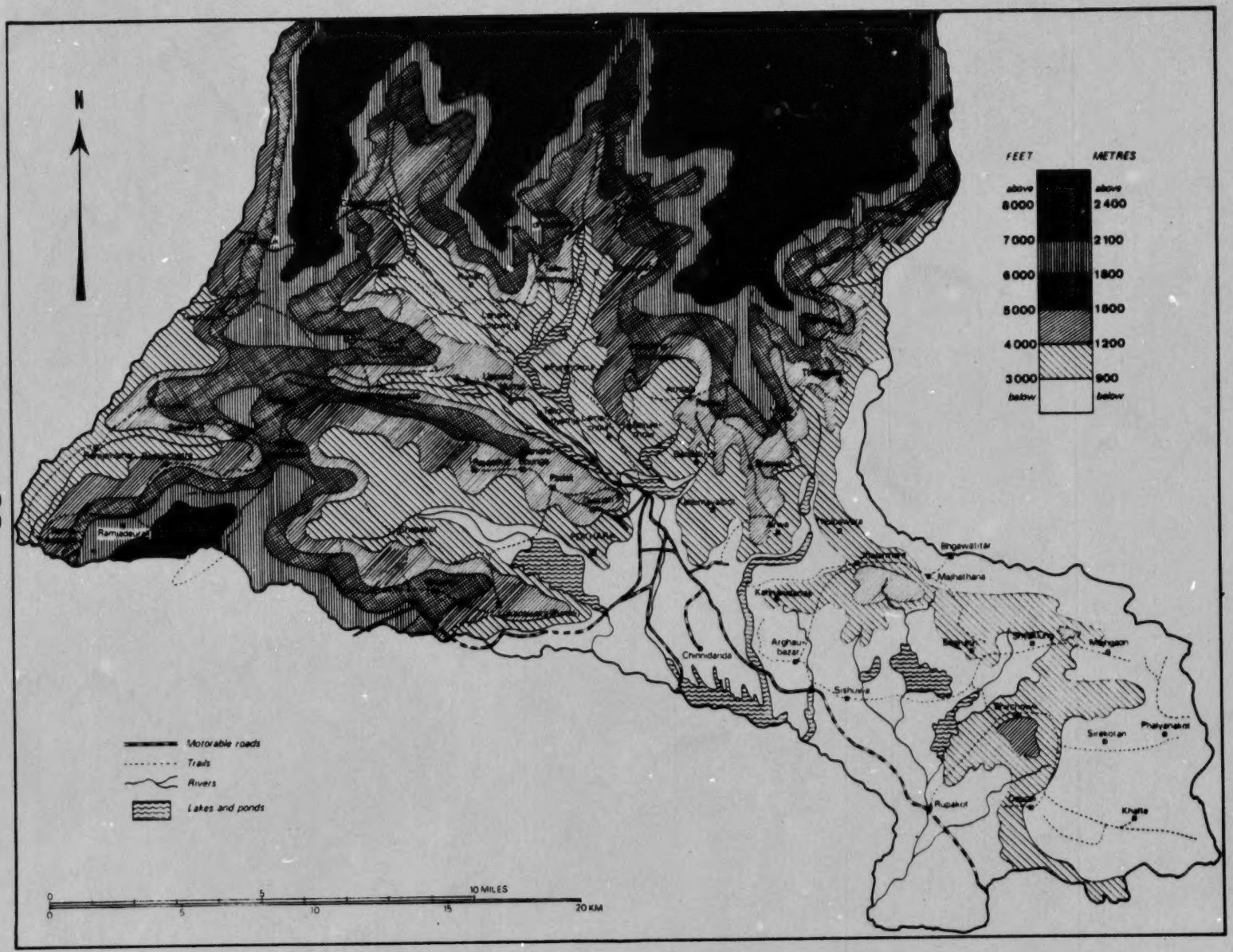


MAP 5. *Physical relief and communications, lower reaches of Kaski*

more densely populated per square kilometre of arable land than the food-surplus valley areas. This imbalance causes migration to the valleys and elsewhere.

A special tradition of emigration to join the Indian and British armies has grown up among the hill people which exerts an important influence by providing an acceptable emigration outlet, a source of income for the family members left behind and a certain receptivity to change among them.

However, economic and social problems are still more pronounced in the hills where agricultural land is ill-distributed, instances of non-viable small farms are too high and much farm fragmentation exists, though these problems also exist in the valleys. The necessities of life absorb about three-quarters of annual expenditure of households, which about half of the families must meet through borrowing thus causing a serious debt problem. Much malnutrition and disease (rickets and tuberculosis), often caused by protein deficiency, is a by-product of this particular problem, though wastage of food exists because of inefficient cooking habits.[1] Exchange marketing between the hills and valleys is poorly developed; the market system is almost totally local and rarely regional. Extreme difficulty of mobility and communication (because of the very serrated topography), especially during the rainy season, further aggravates all these problems.

Many of the social and religious customs of the five ethnic groups distributed throughout the region constitute socio-psycho-cultural barriers to economic and social progress. The illiteracy rate among women, to whom a purely domestic and extremely hard-working role has traditionally been assigned, is over 95 per cent; literacy among men is more prevalent and bears favourable comparison with other districts.

C. AGRICULTURE, INDUSTRY AND SERVICES

Economic and social development of the district must be based mainly on increased agricultural output and improved farming efficiency. The major problem of land distribution must also be tackled.

The survey finding of 1968 for Batulechour Gram *panchayat* that 38 per cent of families own 81 per cent of the land is likely to be fairly true throughout the district.[2]

About 90 per cent of land is inherited and continuous subdivision has rendered holdings too small to be viable. There are twelve persons per hectare in the hilly areas, which is four times the density in the Terai,[3] and the majority of families having non-viable holdings must supplement their income outside agriculture (where they can) or resort to borrowing.

The extremely small size of holding in the Western Hills is shown in Table 29.

It is likely that this same pattern exists in Kaski, especially in the hilly areas. When the size of a viable holding has been put at about five hectares, the acuteness of this problem is realized.[4]

The extent to which the topographical pattern also aggravates agricultural problems is shown by the fact that only 17,000 hectares, or 7.7 per cent of the total land area of the district, is under cultivation. Crop production is shown in Table 30.

Major crops are paddy, maize and millet, representing about 90 per cent both of area under crop and of total production. There is also evidence here of double-cropping.

Estimated livestock at 1970 was 33,000 cows, 22,000 oxen, 77,000 cow-buffalo and 48,000 goats. Fruit tree figures for 1971 were 36,000 banana, 17,000 guava, 6,000 orange, 6,000 mango, 5,000 papaya, 2,000 pear, 2,000 apple, 1,000 lemon and 500 jack-fruit.

Increased output and efficiency in agriculture must be achieved through the use of better seeds and breeds, artificial fertilizer and animal food. A better marketing system must also be introduced. There is much scope for increasing output of vegetables, fruit, food grains and livestock through improved productivity and the introduction of new strains.

To achieve these improvements, however, a change of attitude among farmers is necessary so that they may

1. *Report on socio-economic survey at Batulechour Gram panchayat (Pokhara)*, Singha Durbar, Ministry of Land Reform, Agriculture and Food, 1968; and *Report on food consumption at Batulechour Gram Panchayat (West No. 3)*, Singha Durbar, Ministry of Land Reform, Agriculture and Food, 1968.
2. *Socio-economic survey at Batulechour Gram panchayat*, op. cit., p. 18; 1 acre = 0.6 bighas; 1 bigha = 0.7 hectare.
3. The Terai, consisting of nearly two-thirds of the cultivated land in Nepal, is a twenty-mile wide strip of alluvial land along the northern edge of the gangetic plain.
4. Ram Bahadur. *A general study in land reform, land administration and socio-economic activities*, Kathmandu, Ministry of Land Reform, 1972.

TABLE 29. Size of farm holdings in the Western Hills in 1962

	Less than 1 hectare	1–2	2–3	3–4	4–5	5+	Total
Households	329 411	21 689	3 306	878	327	397	356 008
Percentage	92.5	6.1	0.9	0.3	0.1	0.1	100

SOURCE Calculated from *Agricultural statistics of Nepal*, Kathmandu, Ministry of Food and Agriculture, 1972, Table 5–1, p. 12.

TABLE 30. Area (hectares) and production (M/T) in the District of Kaski, 1970–71

	Paddy	Maize	Wheat	Millet	Barley	Potato	Oil seed	Sugar cane	Tobacco	Total
Area	10 000	9 100	2 100	7 000	100	500	350	75	10	29 235
Percentage	34.2	31.1	7.2	24.0	0.3	1.7	1.2	0.3	—	100
Production	25 100	19 565	2 236	8 470	102	2 100	189	1 035	7	58 804
Percentage	42.7	33.3	3.8	14.4	0.2	3.6	0.3	1.7	—	100

SOURCE *Agricultural statistics of Nepal*, 1972, op. cit., Table 11, p. 34.

modernize their methods. Since the education system must play a certain role here, it is of interest to mention the 1971 survey finding that preparedness to modernize is correlated rather to increase of income than to younger age-group, level of literacy or size of holding.[1] Curriculum development schemes must take account of these facts.

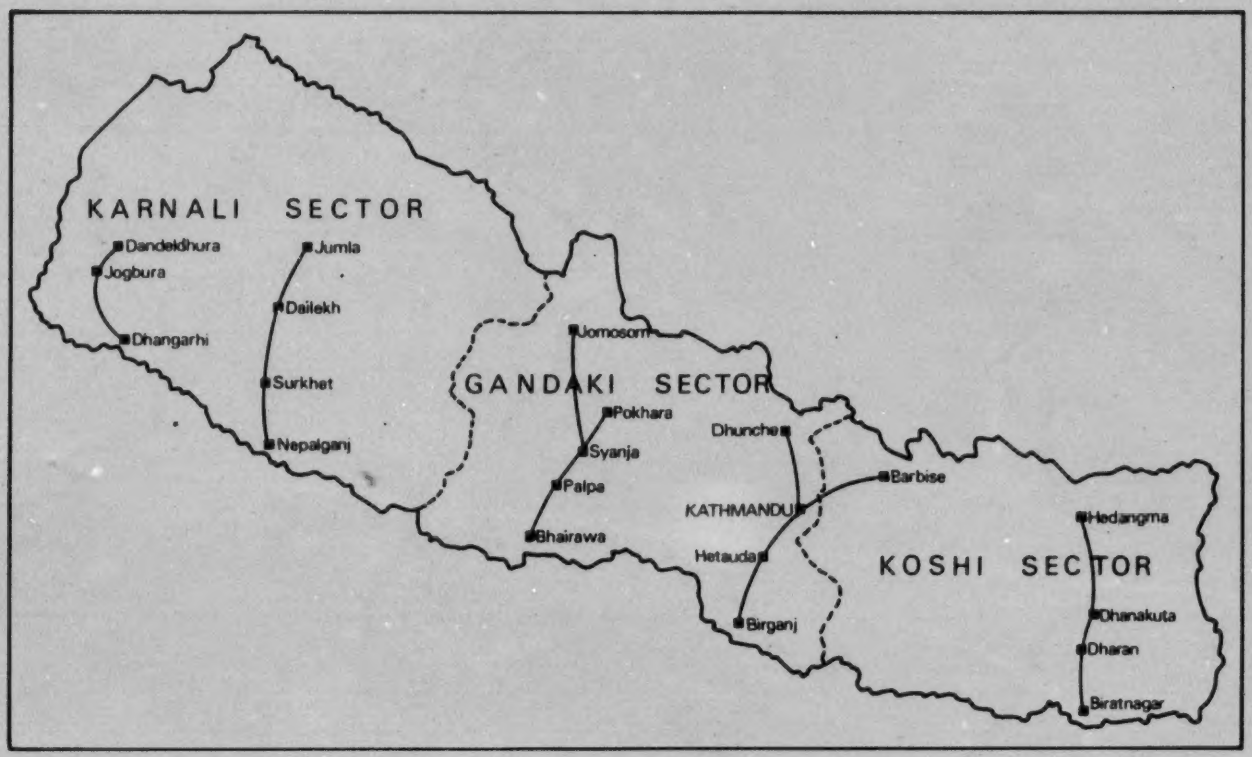
Finally, given the density of population, level of resources and limitations to increased production, further migration from the hills is inevitable. Educationists must play their part, alongside other interests, in training those who stay to increase agricultural productivity and to make better use of the food produced. Given the very small size of holding and the seasonal nature of agricultural activities, it will also be necessary to help people to supplement their income through training for home crafts, cottage industries and tourist development. It may be added that the district has excellent tourist potential with its great scenic beauty, location close to famous Himalayan trails and having air and highway communications with Kathmandu now well developed. Forestry and fishing also have development potential. Further attempts must be made to develop and improve the co-operative, credit and marketing systems, to expand the veterinary service and to encourage self-help and voluntary organizations. Teacher-training courses must be geared to prepare teachers to assist in dealing with these problems.

3. Regional planning

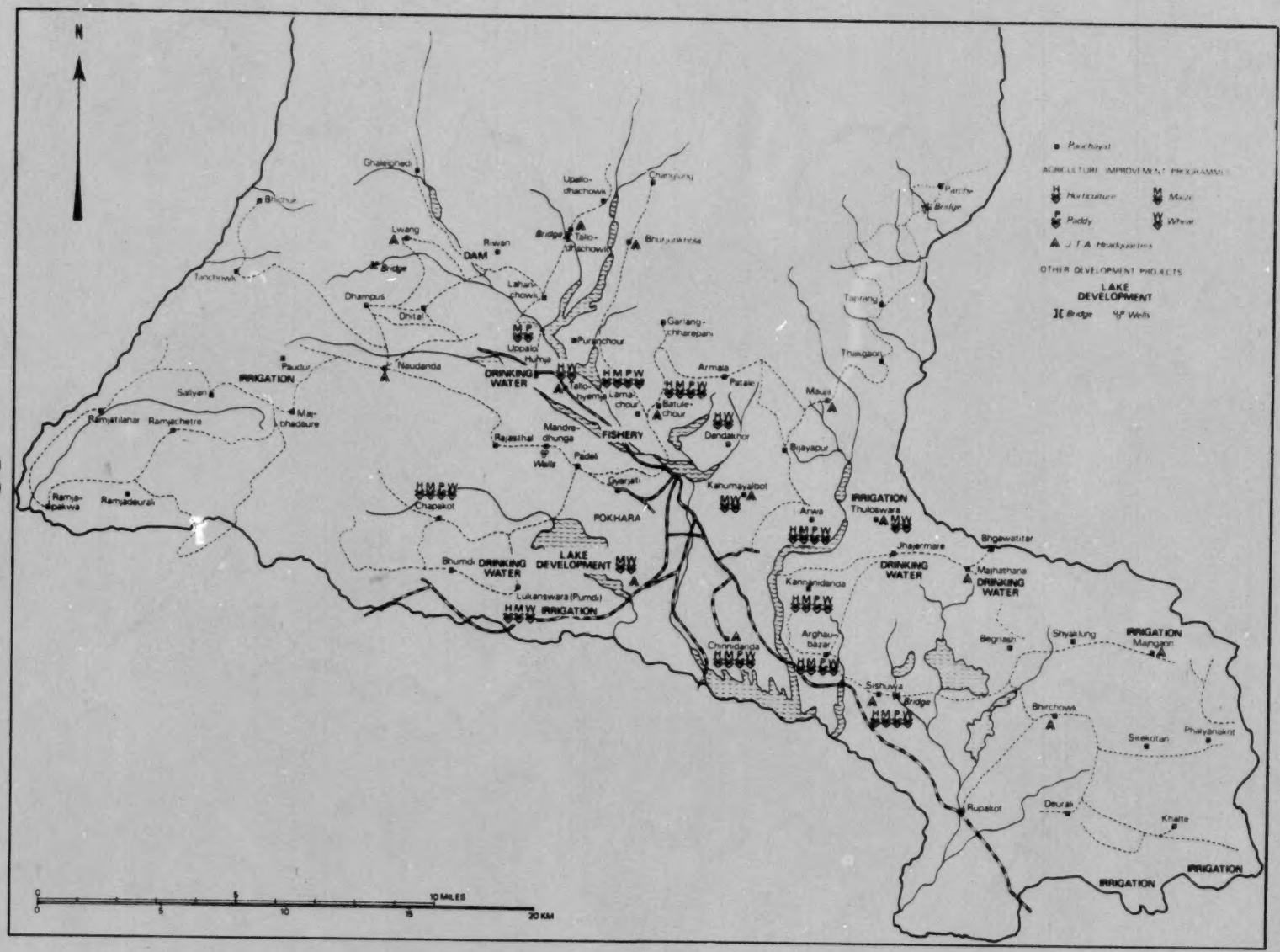
The economic and social problems of Kaski must also be tackled within the framework of the wider regional development planning now being adopted in Nepal.

Strategy for the implementation of regional development policies during the Fourth Plan in Nepal envisages a series of four north–south growth axes linking diverse regions (see Map 6). The juxtaposition of the wide range of resources in the Himalayas, the hills and the Terai within a common development corridor will permit economic viability and generate greater inter-regional mobility of goods, services and people. Thus, the Gandaki growth axis (which includes Kaski within its sphere of influence) will link designated poles of growth from Jomosom (Himalayas) through Pokhara (Hill), Syanja (Hill), Palpa to Bhairawa (Terai). The main principle underlying this policy is given as follows: 'In order to maintain and develop the economic viability of the hills and transmit growth from one region to another, it is essential to determine and initiate those activities in the northern regions for which there is demand in the southern regions.'[2]

1. *Attitudes of farmers toward new methods of farming*, Kathmandu, Ministry of Food and Agriculture, 1971.
2. Harka Gurung, *Regional development planning for Nepal*, Kathmandu, National Planning Commission Secretariat, 1969, p. 15.



MAP 6. *Regional planning strategy for Nepal: development areas and growth axes*



MAP 7. *Kaski: development projects*

Pokhara, capital of the District of Kaski, was designated as a pole of growth along the Gandaki growth axis. This capital, on the site of an ancient trading crossroads for the Tibet–India and East–West routes, is a trading centre of growing importance, as it is now linked by air to Kathmandu and by a 209-kilometre highway through Syanja, Palpa, Butoral, Bhairawa to Sunauli (Indian border) and by a 175-kilometre highway through Tanahun, Gorka, Dhading to Naubise. It is thus destined to play an extremely important role in the development of the district.

The headquarters of many important zonal, regional and district development agencies such as the following are accordingly located in Pokhara:

Zonal and Regional	Agronomy Research Office
	Cottage Industry Training Centre
	Western Zone Regional Development Office
	Western Zone Regional Directorate for Education
District	District Panchayat Office
	Land Reform Office
	Fishery Development Office
	District Education Office

These and other offices will have key roles in initiation and implementation of economic and social development projects and in co-ordination of national and regional development policies. Main projects to be immediately undertaken within the context of the National Plan 1970–75 are shown by symbol in Map 7.

Other projects to be undertaken in the district are as follows:

Central and district projects

Roads

(*a*) Road from Pokhara to link Humja, Dhital, Lwang, Ghalelphedi and Machhapuchhare;
(*b*) Road from Pokhara to link Lamachour, Lahanchowk, Riwan and Machhapuchhare;
(*c*) Road from Nagdanda, Deurali to Lamjung and Tanahun;
(*d*) Main road Chhaharepani *panchayat*;
(*e*) Earthen road to link Kuncha (Lamjung).

Other

(*a*) Provide telephone service at Pokhara;
(*b*) Establish pilot textile industry at Pokhara;
(*c*) Expand health service with emphasis on control of malaria, smallpox and tuberculosis;
(*d*) Provide drinking water to Uppallo Humja *panchayat*;
(*e*) Develop fishery in Lamachour *panchayat*;
(*f*) Provide irrigation in Paudar *panchayat*.

Village projects (costs: 50 per cent village, 50 per cent district *panchayats*)

(*a*) Bridges at Dhampus, Parche, Tallodhachowk, Sishuwa;
(*b*) Culvert at Pokhara, dam at Riwan;
(*c*) Drinking water at Majthana, Jhajermare, Pumdi;
(*d*) Water tank at Lwang, wells at Mandredhunga;
(*e*) Irrigation at Majhgaon, Thuloswara.

4. Demographic trends

A. OVERALL TRENDS

Population trends in Kaski over the decade to 1971 are given in Table 31.

TABLE 31. Population change for the District of Kaski between 1961 and 1971

	1961	1966	Annual increase per cent 1961–66	1971	Annual increase per cent 1966–71
Male	58 765	66 179	2.5	73 590	2.2
Female	68 750	73 452	1.4	78 159	1.3
Total	127 515	139 631	1.9	151 749	1.7

SOURCE Central Bureau of Statistics, 1971.

The most striking feature here is the high ratio of females to males in the total population, although the trend is towards normalization from a ratio of 1.17:1 in 1961 to 1.06:1 in 1971. The ratio is a reflection of the out-migration of men mainly to join the Indian and British armies. During the decade there was also much migration of families to colonize the Terai. The greater annual increase in the male compared to the female population and the improvement in

TABLE 32. Age-group breakdown by sex, 1971

	Males	% of all males	Females	% of all females	Total	% of total pop.	F/M ratio
0–4	9 522	13.0	10 233	13.1	19 755	13.0	1.07
5–9	11 065	15.0	10 922	14.0	21 987	14.5	0.99
10–14	9 991	13.6	8 848	11.3	18 839	12.4	0.88
15–19	7 666	10.4	7 599	9.7	15 265	10.1	0.99
20–24	5 817	7.9	6 415	8.2	12 232	8.1	1.10
25–29	4 730	6.4	5 822	7.4	10 552	7.0	1.23
30–34	4 271	5.8	5 669	7.3	9 940	6.6	1.33
35–39	4 435	6.0	4 974	6.4	9 409	6.2	1.12
40–44	3 828	5.2	4 365	5.6	8 193	5.4	1.14
45–49	3 351	4.6	3 227	4.1	6 578	4.3	0.96
50–54	2 610	3.5	3 049	3.9	5 659	3.7	1.17
55–59	1 969	2.7	1 968	2.5	3 937	2.6	1.00
60–64	1 844	2.5	2 260	2.9	4 104	2.7	1.23
65 +	2 491	3.4	2 808	3.6	5 299	3.5	1.13
TOTAL	73 590	100.0	78 159	100.0	151 749	100.0	1.06

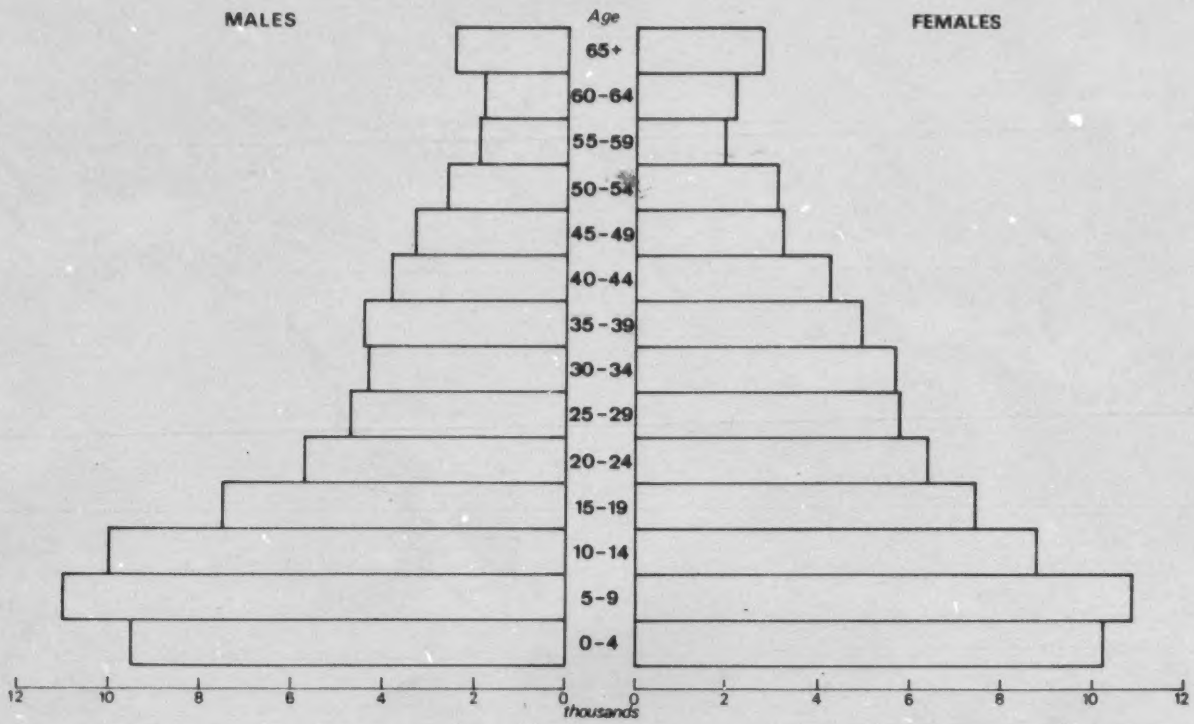


FIGURE 4. *Kaski: pyramid of population by age-group and sex, 1971*

the male/female ratio is largely due to a fall-off in this latter migration and to a certain demobilization.

This out-migration feature is clearly evident also in Table 32, where a breakdown by age-group in 1971 is given, and in Figure 4, where a population pyramid for the same year is shown. Men in the age-group 20–49 years are mainly concerned. It is seen here too, that it continues to be a youthful population; 39.9 per cent are under 15 years of age in 1971 as against 39.4 in 1961.

B. SPATIAL DISTRIBUTION

Geographical distribution of population is given in Table 33 and in Map 8. Village and route networks and density of population are illustrated. Here it becomes clear that population density per square mile of arable land is higher in the hills. There is not much variance from around five persons per household throughout the district.

The capital, Pokhara, with a population of some 20,000 in 1971 is by far the largest town; no other has a population of over 5,000 people. There is a billet for army pensioners beside the capital where some 1,500 army people and their families live and exert a positive economic and social influence in the area.

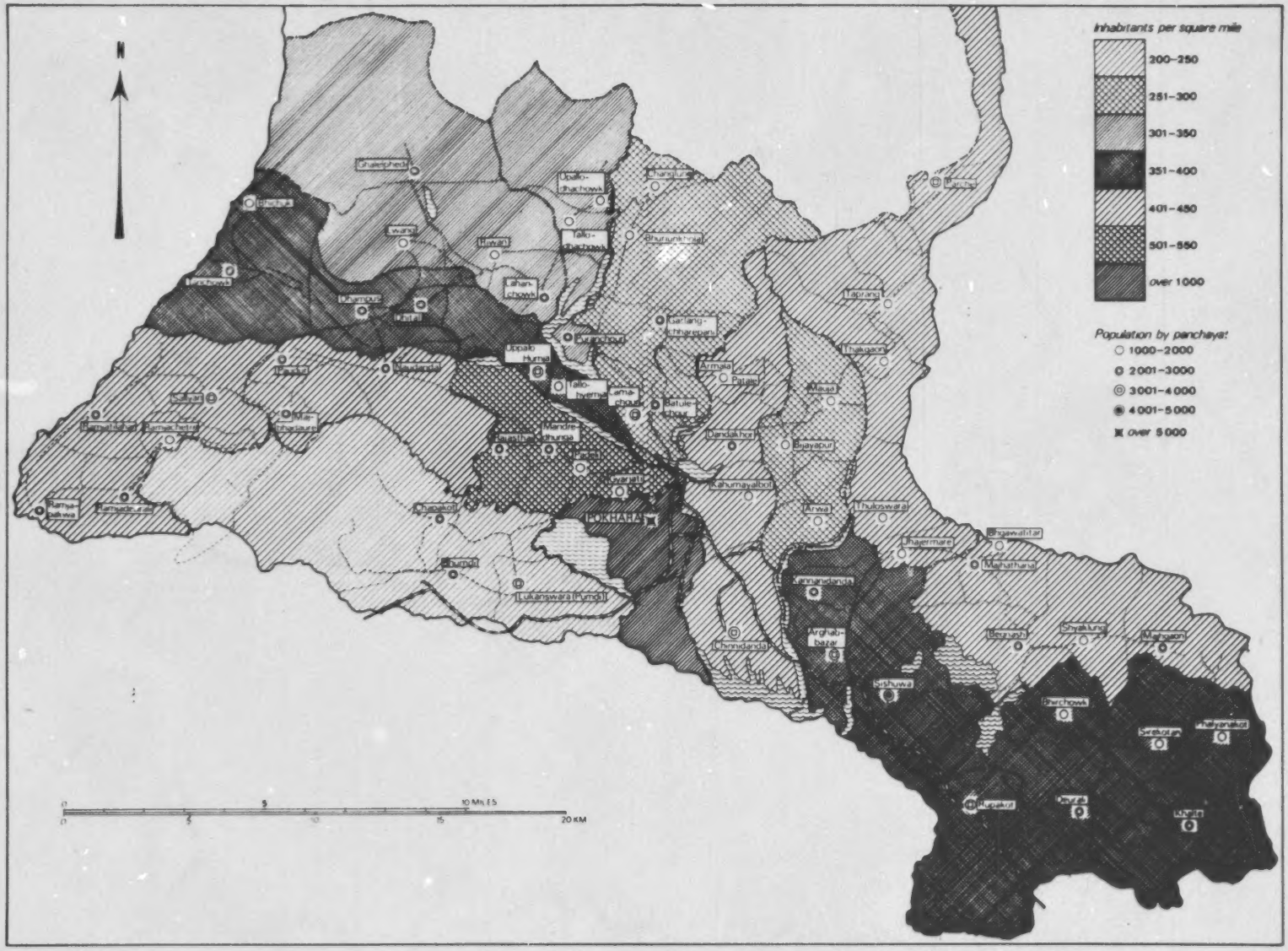
People live mainly in or close to the villages throughout the district. The acuteness of the surface communication problem is also clearly seen from Map 8.

Ethnic group distribution for the district is as follows, with the Gurung group living mainly in the hills: Brahmin, 50 per cent; Gurung, 30 per cent; Newar, 8 per cent; Thakali, 2 per cent; Untouchables, 10 per cent.

The Untouchables are subdivided into further sub-groups thus placing another handicap before a group

TABLE 33. Population density

Area	Area in sq. miles	Pop.	Density per sq. mile	Households	Persons per household
A	17.72	20 611	1 163.1	3 768	5.5
B	26.65	10 257	384.9	2 080	4.9
C	37.45	14 120	377.0	2 728	5.2
D	23.79	10 484	440.7	2 116	5.0
E	24.12	9 735	403.6	1 954	5.0
F	18.56	4 961	267.3	1 003	4.9
G	20.75	8 836	425.8	1 791	4.9
H	35.43	10 537	297.4	2 032	5.2
I	16.53	5 615	339.7	1 122	5.0
J	22.77	7 559	332.0	1 493	5.1
K	33.06	13 095	396.1	2 559	5.1
L	26.82	11 698	436.2	2 251	5.2
M	18.56	7 986	430.3	1 612	5.0
N	15.86	7 974	502.8	1 566	5.1
O	35.60	8 281	232.6	1 653	5.0
Uninhabited mountain area	129.33	—	—	—	—
TOTAL	503.00	151 749	301.7	29.728	5.1



MAP 8. *Population density and population of panchayats*

already extremely disadvantaged. However, the existence of these religious and social differences and of various dialects throughout Kaski do not in themselves constitute major obstacles to development. The New Country Code of Nepal guarantees equal rights for every man and woman of Nepal, without any discrimination of class, creed, colour or sex.

C. MIGRATION

The out-migration from the district already mentioned takes place mainly from the hills, but is now easing off.

For lack of the detailed data required, it is not possible to assess to what extent internal migration within Kaski occurs. It is not likely to be very significant (at present) though there may be a fair amount of seasonal movement. Thus many ethnic groups come down from the hills in winter to spend several months in the bazaar at Pokhara, where they engage in bartering.

> 'Every household in the northern villages sends some of its members to Pokhara. It is not uncommon even for children of 12 to be sent; while their family continues to run the home, the boys buy and sell in Pokhara and the girls weave. None of these newcomers attends any school, either in Pokhara or in the home village.'[1]

There is also seasonal movement of labour during the planting and harvesting seasons.

D. POPULATION FORECAST

The present birth rate, estimated at 41 per 1,000, is very high. However, the death rate at 22.9 per 1,000 is also very high, leaving the annual natural increase calculated for 1966–71 at 1.81 per cent. Given an annual net migration for the same period of 0.11 per cent, population growth rate was 1.7 per cent per annum.[2]

1. *Equality of access of women to education*, op. cit.
2. *Demographic yearbook, 1971*, op. cit.

TABLE 34. Estimates of population for 1976 and 1981

Area	Name of the *panchayat*	1976	1981	Area	Name of the *panchayat*	1976	1981
A	Pokhara	22 059	23 715	I	Puranchour	2 672	2 874
	TOTAL	22 059	23 715		Upallodhachowk	1 650	1 775
B	Kannanidanda	2 923	3 142		Tallodhachowk	1 595	1 716
	Arghaubazar	3 506	3 766		TOTAL	5 917	6 365
	Sishuwa	4 523	4 861	J	Lahanchowk	2 803	3 014
	TOTAL	10 952	11 769		Riwan	1 355	1 457
C	Rupakot	4 119	4 428		Ghalelphedi	2 757	2 964
	Bhirchowk	1 925	2 069		Lwang	1 195	1 285
	Deurali	2 768	2 975		TOTAL	8 110	8 720
	Khalte	2 588	2 792				
	Phalyanakot	1 685	1 811	K	Dhital	2 403	2 583
	Sirekotan	2 001	2 151		Dhampus	2 520	2 709
	TOTAL	15 086	16 226		Bhichuk	1 263	1 358
D	Majhgaon	2 942	3 162		Tanchowk	2 550	2 741
	Shyaklung	1 693	1 820		Uppalo Humja	3 246	3 489
	Begnash	2 288	2 459		Tallohyemja	2 049	2 203
	Majhathana	2 271	2 441		TOTAL	14 031	15 083
	Bhgawatitar	2 001	2 150				
	TOTAL	11 195	12 032	L	Sallyan	3 287	3 535
E	Jhajermare	2 066	2 220		Ramjachetre	2 048	2 203
	Thuloswara	1 419	1 526		Ramjatilahar	2 797	3 008
	Thakgaon	1 849	1 988		Ramjapakwa	2 210	2 376
	Taprang	1 701	1 829		Ramjadeurali	2 146	2 308
	Parche	3 346	3 597		TOTAL	12 488	13 430
	TOTAL	10 381	11 160				
F	Mauja	1 970	2 117	M	Paudur	3 002	3 228
	Bijayapur	1 315	1 413		Majbhadaure	2 808	3 019
	Arwa	2 069	2 223		Naudanda	2 705	2 908
	TOTAL	5 354	5 753		TOTAL	8 515	9 155
G	Dandakhor	2 291	2 465	N	Rajasthal	2 686	2 888
	Armala Patale	1 805	1 939		Mandredhunga	2 493	2 681
	Chinnidanda	4 006	4 309		Gyarjati	1 389	1 493
	Kahumayalbot	1 303	1 401		Padeli	1 947	2 093
	TOTAL	9 405	10 114		TOTAL	8 515	9 155
H	Bhurjunkhola	1 859	1 998	O	Chapakot	2 923	3 144
	Garlangchharepani	2 430	2 612		Bhumdi	2 494	2 683
	Lamachour	3 273	3 518		Lukanswara (Pumdi)	3 500	3 765
	Changlung	1 311	1 409		TOTAL	8 917	9 592
	Batulechour	2 401	2 581				
	TOTAL	11 274	12 118		GRAND TOTAL	162 199	174 387

With the implementation of the family planning programme, the birth rate must certainly decrease somewhat in future. But with improving social standards and health facilities, it is likely that the death rate too must decrease. Taking these considerations into account, the Central Statistics Bureau, Kathmandu, prepared estimates of population by *panchayat* in 1976 and 1981 by setting an annual growth rate of 1.5 per cent.[1] This forecast is given in Table 34.

These estimates are rather rudimentary in that the same growth rate was applied throughout the district, though some population decline in the hills would seem inevitable. Nor were the demographic effects of planned development projects taken into account. It is also quite likely that the population of Pokhara, now poised for expansion, may increase by as much as 50 per cent over the next decade.

However, at the present level of development of school networks in Kaski, with the low level of participation and the unlikelihood of major population changes during the next decade (excepting Pokhara), planning of location does not require highly sophisticated population projection, as may be seen in the next chapter. In addition, a limited census of the district is planned for 1976, after which more accurate population estimates may be made.

1. Statistics prepared by Mr. Keshav Raj Sharma, statistician at the Central Board of Statistics.

IV. Proposals for school network development

1. General

Proposals for the rational development of the school network in the district of Kaski are prepared in this chapter in the light of national policies and criteria affecting school location on the one hand and of the analysis and diagnosis of the existing networks on the other. National criteria are those largely defined in the Education Plan 1971–76, which in turn were defined to integrate with the aims and targets of the Fourth National Plan for Economic and Social Development in Nepal.[1]

So as to achieve the economic, social and educational aims desired, it was deemed essential to introduce a major educational reform nationally during the course of these plans. In this chapter the use of the prospective part of the school mapping technique for the implementation of this reform and to achieve educational targets is demonstrated. The targets set are tested and the method of preparing proposals outlined first before defining the educational development network in mapping form. Means and effects of implementing the proposals are also discussed in the concluding part of the chapter.

2. Main objectives and norms of the reform

The elements of the national educational reform are geared to solving the main educational problems requiring priority action. They comprise aims, criteria and targets of a social, pedagogical and administrative nature meant to be implemented in concert.

The major reform to be implemented is a structural change from a '5-3-2' to a '3-4-3' system, that is, primary grades I, II, III; middle IV, V, VI, VII; and high VIII, IX, X. Other main elements of the reform affecting the location of first- and second-level schools are summarized as follows under these headings:

i. Social

(*a*) Increase overall participation at the first level, and especially that of girls;
(*b*) Reduce disparity of education supply between and within regions;
(*c*) Give priority of provision to *panchayats* having no school;
(*d*) Give special consideration on minimum norms to remote areas; where there was primary enrolment of eleven to fifty, the pre-reform system grades IV and V may exceptionally be retained; in such conditions also pre-reform middle school having enrolment of forty-five may be recognized if properly located;
(*e*) School activities should lead towards national cohesion.

ii. Pedagogical

(*a*) General objectives within primary—'to make pupils literate', middle—'to provide general curriculum and pre-vocational subjects', high—'to prepare workers with skills';
(*b*) Standardize the curriculum and also teaching methods;
(*c*) Align the curriculum to manpower and development needs;
(*d*) Each school to maintain a demonstration garden and playfield;
(*e*) Improve quality generally; textbooks to be offered free to pupils in remote areas and at a reasonable price to others;
(*f*) Increase the proportion of qualified teachers to 75 per cent.

iii. Administrative norms

(*a*) Incorporate pre-primary classes in grade I and reduce wastage as much as possible;
(*b*) National targets for participation as follows:
Primary: average 64 per cent of age-group 6 to 8;
Middle: 40 per cent of primary enrolment:
High: 50 per cent of middle school (or first stage) enrolment:
(*c*) Average pupil/teacher ratios: primary 30:1 (minimum 15, maximum 40), middle 25:1, high 25:1;

1. *National education system plan for 1971–76*, op. cit.

(*d*) School/supervisor ratios: (a) Valley and Terai—primary 30:1, middle 15:1, high 10:1; (b) Hilly areas—primary 20:1, middle 15:1, high 7:1;

(*e*) Minimum distance between primary schools—one mile; if closer, amalgamate, provided total enrolment does not exceed 150;

(*f*) Minimum enrolment for recognition of primary school, thirty pupils; exceptions may be made for sparsely populated areas;

(*g*) Combined middle/high schools only are acceptable; second-stage courses not to be provided in separate establishments;

(*h*) Area norm for middle/high school garden, 0.102 hectares;

(*i*) Recognition of middle/high schools to be given only in the following circumstances:[1]

Type A: Minimum enrolment of ninety in grades VIII–X;

Type B: Minimum enrolment of sixty in grades VIII–X, provided emphasis is placed on vocational subjects;

Type C: If two or more proximate middle schools combine to make up a potential grade VIII–X enrolment of 100, then a middle/high school may be recognized at one of them.

(*j*) Administrative authority to be decentralized as much as possible from the central offices to the District Education Offices with the improved supervisory system to be directed from these.

Before proceeding to assess the enrolment targets set by Nepal it is necessary to make some comment on the national objectives and on the reform set out above.

Many educationists hold that a minimum of four years at the first level of education is required. If the emphasis is placed very firmly on functional literacy then the results may be satisfactory. It would seem that at some time in the future a lengthening of the primary period from three years must come and this should also be borne in mind when development proposals are being made.

It may also be felt by many that there is a certain inconsistency between the search for rationalization implied by the objectives and the setting of minimum norms for middle and middle/high schools at forty-five and sixty respectively. Firstly, these schools are below the minimum size which facilitates an acceptably high utilization of scarce teacher and physical resources. Secondly, it is doubtful if, in the short term, sufficient specialist teachers can be prepared to teach the vocational skills intended successfully.[2]

Also setting a common target of twenty throughout the country for the primary schools/supervisor ratio is rather unrealistic since topographical differences, not only between but also within districts, are a very important factor here. For this reason a somewhat lower target might be more suitable for Kaski to allow for the difficult 'hilly' terrain and because of the very important role to be played by these people in the development of education at this stage.

There must also be a certain inconsistency between the objectives of standardizing the curriculum and teaching methods throughout the country and aligning the curriculum to manpower and development needs. In development of curriculum and teaching methods account should be taken too of the many variations in economic and social requirements, such as those between urban and rural areas and others depending on resource availability, and so on.

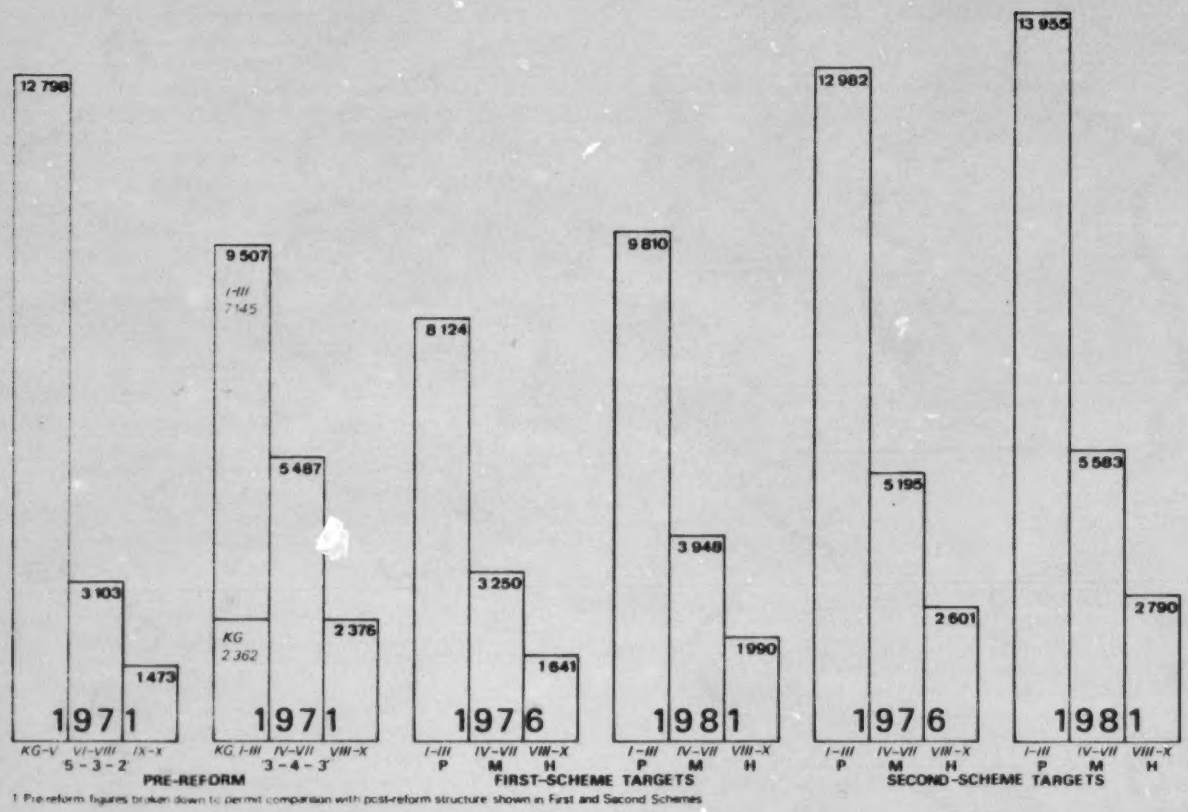
3. Enrolment targets

First-level participation targets for the years 1976 and 1981 set at the national level for the age-group 6–8 and grades I–III are shown in Table 35. For comparison purposes participation rates for this age-group and these grades, together with rates for the age-group 6–10 and grades I–V

1. While norms here refer to enrolment size of schools for recognition it is envisaged in the reform that high schools may be classified as follows:
   (*a*) *General:* mainly general curriculum.
   (*b*) *Sanskrit:* emphasis on Sanskrit.
   (*c*) *Vocational:* emphasis on vocational subjects.
2. Jacques Hallak and James McCabe, *Planning the location of schools: County Sligo, Ireland*, Paris, Unesco/IIEP, 1973, (Chapter X).

TABLE 35. Apparent participation rates, grades I–V (age-group 6–10), grades I–III (age-group 6–8) in 1971 and participation targets set by Nepal for 1976 and 1981

	Grades I–V, 1971		Grades I–III, 1971		KG–III, 1971	Grades I–III, 1976		Grades I–III, 1981	
Area	Apparent participation	% girls enrolled	Apparent participation	% girls enrolled	Apparent participation	Apparent participation	% girls enrolled	Apparent participation	% girls enrolled
A	97.0	34	112.1	37.1	114.9	112.1	41.6	95	45
B	53.6	22	62.1	19.9	98.1	64.4	25.8	70	30
C	51.3	18	57.1	13.8	94.0	60.1	19.7	68	26
D	60.6	16	69.6	31.5	85.0	71.7	33.2	77	37
E	43.1	26	54.7	17.8	78.5	63.6	25.5	70	30
F	46.1	16	48.8	15.9	73.9	60.7	28.1	68	33
G	57.5	25	63.9	28.9	69.2	71.9	37.1	77	40
H	59.5	18	63.4	26.5	81.0	71.6	35.9	77	38
I	46.4	14	47.7	15.8	76.0	60.3	26.7	68	31
J	37.4	17	42.0	14.5	54.2	62.6	25.8	68	30
K	38.8	13	42.3	12.0	62.8	54.2	17.5	64	25
L	38.2	12	40.3	11.4	64.9	52.0	15.1	64	23
M	30.3	9	31.9	9.1	53.6	55.1	21.7	64	26
N	37.1	6	37.8	5.1	56.4	54.5	18.9	64	25
O	56.3	17	60.5	28.4	84.7	66.0	33.3	73	37
TOTAL	54.0	20	60.4	19.8	80.3	64.9	28.9	73	33.2



1 Pre-reform figures broken down to permit comparison with post-reform structure shown in First and Second Schemes

FIGURE 5. *Enrolment projections for 1976 and 1981 on the basis of First-Scheme and Second-Scheme targets*

(pre-reform first level), are also shown in this table.

To set these targets the overall average participation for the district was put at 64.9 per cent. Then rates were distributed by area to narrow the gap found in 1971. Thus, rates in the 'weaker' areas were raised more than those in the relatively more advanced areas.

In examining the feasibility of the targets set it is necessary to state that the 'real' participation rate for the 6 to 8 age-group in 1976 is 45.4 per cent, as 9.2 per cent of 4–5-year-olds and 20.4 per cent of 9–10-year-olds are included to make up the 64.9 'apparent' participation rate given in Table 35, thus creating some 30 per cent of pupils outside the 6–8 age-group. Similarly, the 'real' participation rate for the 6–8 age-group set for 1981 is 62.6 as against the 'apparent' rate of 73.7, since 5.3 per cent and 11.5 per cent of the 4–5 and 9–10 age-groups respectively are included, that is some 15 per cent of total enrolment. Thus, the targets allow for enrolments of less than half the 6–8 age-group in 1976 and only two-thirds of them in 1981.

For this reason alone it could be considered that these targets are not sufficiently ambitious. But as was mentioned earlier in the analysis chapter and as may be seen from Table 35, it is clear from examination of the apparent participation rates for kindergarten–grade III that Kaski has already passed the national apparent participation target of 64 per cent for the 6–8 age-group. It is further illustrated in Table 36 and Figure 5 that more ambitious targets are necessary to maintain the overall dynamism of first-level/second-level enrolment growth. Accordingly, a more ambitious set of targets has been set out as a basis for the preparation of proposals in a *Second Scheme*.[1]

The Second-Scheme targets consist of a straightforward 100 per cent apparent participation rate for the 6–8 age-group in the district for both 1976 and 1981, together with the national criteria for grades IV–VII and VIII–X enrolments. Achievement of these targets seems feasible since the increase envisaged is well within the 49 per cent rise in primary enrolment between 1965/66 and 1970/71, although it should be mentioned that kindergarten to grade V were then included. It is also envisaged that the percentage of primary pupils enrolled outside the 6–8 age-group will be diminished steadily, thus probably enabling the achievement of universal compulsory first-level education for this age-group in 1981.

Achievement of the First-Scheme targets, while increas-

1. Proposals to be prepared on the basis of the Nepal targets will be termed hereafter the *First Scheme*.

TABLE 36. Enrolments in 1970/71 and enrolment projection based on First-Scheme (Nepalese) and higher Second-Scheme targets

		First Scheme		Second Scheme	
		Enrolment targets		Enrolment targets	
	Enrolm. 1970/71	1976	1981	1976	1981
Kindergarten	2 362	—	—	—	—
Grades I–V	10 436	—	—	—	—
Kindergarten–grade V	12 798	—	—	—	—
Grades I–III	7 145	8 124	9 810	12 982	13 955
Grades IV–VII	5 487	3 250	3 948	5 195	5 583
Grades VIII–X	2 380	1 641	1 990	2 601	2 790
Kindergarten–grade X	17 374	—	—	—	—
Grades I–X	15 012	13 015	15 748	20 778	22 328

ing grade I–III enrolments by 1976, would cause substantial decreases for grades IV–VII and VIII–X if the ratios laid down are followed, that is, primary/middle/high equal to 5:2:1. In brief, realization of these targets would lead to a very large fall in the combined first- and second-level enrolments from 17,374 in 1971 to some 13,015 in 1976. Not even in 1981, when a combined enrolment of 15,748 might be achieved, would the 1971 figure be surpassed.

Apart from the fact that a policy of reducing second-level enrolment, as implied by the First-Scheme targets, is difficult to recommend, it is also doubtful whether it would be acceptable. Where a certain pressure for second-level education has built up, this would inevitably lead to maintaining the participation pattern at its present level.

On the basis of the Second-Scheme targets on the other hand, not only would grades I–III enrolment be increased by over 36 per cent above the 1971 equivalent figures (9,507 for kindergarten–grade III) to 12,982 in 1976, but also the combined first- and second-level enrolment would go up by 20 per cent to some 20,778, thus achieving the main aim of rapid primary expansion while maintaining second-level pressure. Then, from 1976 to 1981, a more modest first-level increase alongside steady second-level expansion might be achieved. Besides, it must be expected that the District of Kaski, whose level of economic and social development is well above the national average, must also achieve participation well ahead of the national average.

Two alternative sets of proposals will be prepared, however, for the development of the school network, as follows:

First Scheme, based on enrolment projection in accordance with Nepalese targets;

Second Scheme, on the basis of enrolments according to the more ambitious targets shown in Table 36.

For the preparation of these proposals, enrolment projections by village *panchayat* in 1976 and 1981, on the basis of the two sets of targets (First and Second Schemes), are given in Table 37 (see pages 48–49).

The Second-Scheme projection consists of a straightforward apparent participation rate of 100 per cent of the 6–8 age-group (or 8 per cent of the population) for both 1976 and 1981, with the intention that the numbers enrolled in first level outside this age-group will be diminished steadily over this period (when total population will also have increased), thus leading towards universal (and perhaps compulsory) primary education for this group by 1981.

Although the target has been applied evenly throughout the district, it is accepted that this will be difficult to achieve in the 'hilly' areas (J–N) found in Chapter II to be weak in participation. On the other hand, compensatory development is expected to occur in the more advanced areas such as A–D, H and O. This is especially true for area A (Pokhara) where 20 per cent of all first-level enrolment was recorded in 1971.

While keeping these facts in mind, it is considered more convenient for comparative and performance evaluation purposes to retain the even target of 100 throughout. It will be necessary to consider these points later when supply proposals are being made on the basis of this target.

4. Preparation of proposals

An iterative approach to the preparation of proposals must be made because so many factors have to be taken into account. In addition to those mentioned earlier, such as national policies and criteria affecting school location, reform objectives and findings from the analysis of the network made in Chapter II, the following must also be considered:

(*a*) topography and communications;
(*b*) village size and likely growth;
(*c*) 1971 participation rates;
(*d*) pattern of existing school network;
(*e*) economic and social development programmes for the district;
(*f*) general feasibility of implementation as assessed in consultation with district administration;
(*g*) feasibility of supply of staff and accommodation;
(*h*) financial constraints.

It is appropriate to mention again the main problems for solution discovered by analysis of the existing system. These include:

(*a*) low levels of participation, especially of girls;
(*b*) high wastage rates;
(*c*) large proportion of unqualified teachers;
(*d*) lack of modern teaching methods and aids;
(*e*) low pupil/teacher ratio generally;
(*f*) poor standard of buildings and equipment.

The main proposals will consist of two short-term schemes following the separate targets discussed earlier, prepared to show the school network as it might be developed to 1976. Other less detailed suggestions will also

TABLE 37. Enrolment projection by village *panchayat* 1976 and 1981 for First-Scheme and Second-Scheme targets[1]

Area		First-Scheme targets						Second-Scheme targets					
		1976			1981			1976			1981		
		I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X
A	Pokhara	1 429	572	286	1 739	696	348	1 764	706	353	1 897	759	380
	TOTAL	1 429	572	286	1 739	696	348	1 764	706	353	1 897	759	380
B	Kannanidanda	145	58	29	170	68	34	234	94	47	252	101	50
	Arghaubazar	174	70	35	204	81	42	281	112	56	302	121	60
	Sishuwa	224	90	45	263	105	53	362	145	73	389	156	78
	TOTAL	543	218	109	637	254	129	877	351	176	943	378	188
C	Rupakot	191	76	38	232	93	47	330	132	66	355	142	71
	Bhirchowk	89	36	18	109	43	22	154	62	31	166	66	33
	Deurali	128	51	26	156	62	31	222	89	45	238	95	48
	Khalte	120	48	24	147	59	30	208	83	42	224	90	45
	Phalyanakot	78	31	16	95	38	19	135	54	27	145	58	29
	Sirekotan	93	37	19	113	45	23	161	64	32	173	69	35
	TOTAL	699	279	141	852	340	172	1 210	484	243	1 301	520	261
D	Majhgaon	162	65	33	188	75	38	235	94	47	253	101	50
	Shyaklung	94	37	19	108	43	22	135	54	27	146	58	29
	Begnash	127	51	26	146	58	29	183	73	37	197	79	40
	Majhathana	126	50	25	145	58	29	182	73	36	195	78	39
	Bhgawatitar	110	44	22	128	51	26	161	64	32	173	69	35
	TOTAL	619	247	125	715	285	144	896	358	179	964	385	193
E	Jhajermare	101	41	21	120	48	24	165	66	33	178	71	36
	Thuloswara	70	28	14	82	33	17	114	46	23	122	49	24
	Thakgaon	91	36	18	107	43	22	148	59	30	159	64	32
	Taprang	84	33	17	99	40	20	136	54	27	146	58	29
	Parche	164	66	33	194	78	39	268	107	54	288	115	57
	TOTAL	510	204	103	602	242	122	831	332	167	893	357	178
F	Mauja	92	37	19	111	44	22	158	63	32	169	68	34
	Bijayapur	62	25	13	74	30	15	105	42	21	113	45	23
	Arwa	97	39	20	117	47	24	166	66	33	178	71	35
	TOTAL	251	101	52	302	121	61	429	171	86	460	184	92
G	Dandakhor	127	51	26	147	59	30	183	73	37	197	79	40
	Armala Patale	100	40	20	115	46	23	144	58	29	155	62	31
	Chinnidande	222	89	45	256	102	51	320	128	64	345	138	69
	Kahumayalbot	72	29	15	83	33	-17	104	42	21	112	45	23
	TOTAL	521	209	106	601	240	121	751	301	151	809	324	163
H	Bhurjunkhola	103	41	21	119	48	24	149	60	30	160	64	32
	Garlangchharepani	134	54	27	155	62	31	194	78	39	209	84	42
	Lamachour	181	72	36	209	84	42	262	105	53	281	112	56
	Changlung	72	29	15	84	34	17	105	42	21	113	45	22
	Batulechour	133	53	27	153	61	31	192	77	39	206	82	41
	TOTAL	623	249	126	720	289	145	902	362	182	969	387	193
I	Puranchour	124	50	25	150	60	30	214	86	43	230	92	46
	Upallodhachowk	77	31	16	93	37	19	132	53	27	142	57	28
	Tallodhachowk	74	30	15	90	36	18	128	51	26	137	55	27
	TOTAL	275	111	56	333	133	67	474	190	96	509	204	101
J	Lahanchowk	135	54	27	158	63	32	224	90	45	241	96	48
	Riwan	65	26	13	76	31	16	108	43	22	117	47	24
	Ghalelphedi	133	53	27	156	62	31	221	88	44	237	95	47
	Lwang	58	23	12	67	27	14	96	38	19	103	41	20
	TOTAL	391	156	79	457	183	93	649	259	130	698	279	139

1. Second-Scheme targets: 1976 and 1981 apparent participation rate 100 per cent with almost complete participation of 6–8 age-group in 1981; 6–8 age-group taken at 8 per cent of population for Second-Scheme targets.

Table 37 (*continued*)

Area		First-Scheme targets						Second-Scheme targets					
		1976			1981			1976			1981		
		I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X	I–III	IV–VII	VIII–X
K	Dhital	101	40	20	128	51	26	192	77	39	207	83	42
	Dhampus	105	42	21	133	54	27	202	81	41	217	87	44
	Bhichuk	53	21	11	67	27	14	101	40	20	109	44	22
	Tanchowk	107	43	22	135	54	27	204	82	41	219	88	44
	Uppalo Humja	136	54	27	172	69	35	260	104	52	279	112	56
	Tallohyemja	86	34	17	109	44	22	164	66	33	176	70	35
	TOTAL	588	234	118	744	299	151	1 123	450	226	1 207	484	243
L	Sallyan	132	53	27	175	70	35	263	105	53	283	113	56
	Ramjachetre	82	33	17	109	44	22	164	66	33	176	70	35
	Ramjatilahar	112	45	23	149	59	30	224	90	45	241	96	48
	Ramjapakwa	89	35	18	117	47	24	177	71	32	190	76	38
	Ramjadeurali	86	34	17	114	46	23	172	69	35	185	74	37
	TOTAL	501	200	102	664	266	134	1 000	401	198	1 075	429	214
M	Paudur	128	51	26	159	64	32	240	96	48	258	103	51
	Majbhadaure	119	48	24	149	60	30	225	90	45	242	97	48
	Naudanda	115	46	23	144	57	29	216	86	43	233	93	46
	TOTAL	362	145	73	452	181	91	681	272	136	733	293	145
N	Rajasthal	113	45	23	143	57	29	215	86	43	231	92	46
	Mandredhunga	105	42	21	132	53	27	199	80	40	214	86	43
	Gyarjati	58	23	12	74	30	15	111	44	22	119	48	24
	Padeli	82	33	17	103	41	21	156	62	31	167	67	33
	TOTAL	358	143	73	452	181	92	681	272	136	731	293	146
O	Chapakot	149	60	30	177	71	36	234	94	47	252	101	51
	Bhumdi	127	51	26	151	60	30	200	80	40	215	86	43
	Lukanswara (Pumdi)	178	71	36	212	85	43	280	112	56	301	120	60
	TOTAL	454	182	92	540	216	109	714	286	143	768	307	154
	GRAND TOTAL	8 124	3 250	1 641	9 810	3 926	1 979	12 982	5 195	2 602	13 957	5 583	2 790

be made for the medium-term–horizon year 1981. Proposals for the capital Pokhara will be dealt with separately since the planning of school development here must be done in very close liaison with urban planning. Effects of implementation are also assessed.

As a first iteration, beginning with demographic conditions, levels of population warranting full '3-4-3' and '3-4' only provisions are calculated on the basis of participation targets and enrolment criteria set and are checked against the projected population. In this regard the average position is shown in Table 38; more detailed data for the different areas are given in the Appendix, Table 7.

Following the picture given accordingly of general viability on a demographic basis, focus is next placed on the existing network of first-level schools. The smaller schools under fifty enrolment are examined both for viability and as to whether they may continue for remoteness reasons while retaining grades IV and V. Available accommodation and location are also examined before making overall decisions on the additional schools required, re-location and on the schools to be phased out. The resultant proposals are described on Maps 9 and 11 for the two alternative schemes.

Turning to the second-level network, projected enrol-

TABLE 38. Village size warranting the provision of '3-4-3' and '3-4' systems at participation rates 64.9, 73.7 and 100 per cent.

	Enrolment					
	Gr.I–III	Gr. IV–VII (40% I–III)	Gr.VIII–X (50% IV–VII)	At partic. 64.9% (1976: Nepal tgts.)	At partic. 73.7% (1981: Nepal tgts.)	At particip. 100%
'3-4-3': M/H						
Type A	450	180	90	8 981	7 909	5 829
Type B	300	120	60	5 988	5 273	3 886
Type C	500	200	100	9 979	8 788	6 477
'3-4' only[1]	250	100	—	4 989	4 393	3 238

1. Minimum middle school enrolment taken at 100 (i.e. 4 × 25) though lower norm may be accepted exceptionally for remote areas

ments for grades IV–VII and VIII–X are described on Map 10 by village *panchayat*. As for the first level, before making firm proposals on the basis of this potential demand, further systematic iteration must be conducted in the light of all the factors mentioned earlier and especially with the aid of the following maps and tables:

Map 5. Physical relief and communications, lower reaches of Kaski (see p. 35);
Map 7. Development projects (see p. 38);
Map 2. School network, 1971: first and second levels (see p. 18);
Table 37. Enrolment projections at 1976, 1981 (see (pp. 48–49).
Appendix, Table 7. Population required to justify '3-4-3' and '3-4' supplies (see p. 76);
Appendix, Table 5. Small schools between twenty-six and fifty in enrolment, 1971 (see p. 73).

5. Proposals

A. FIRST SCHEME (Nepalese targets)

i. First level

Following the above approach, proposals are prepared under this scheme. The position is summarized in Table 39, where enrolment targets by area are fitted against pupil-places available in 1971. Because of the level of participation set and the structural reform whereby grades I–III occupy the places formerly used by kindergarten–grade V, there is obviously a big surplus of pupil-places throughout the district.

The scheme provides for rationalization of the school network in accordance with demographic and communications conditions, location and other criteria imposed, but does not achieve high utilization of available accommodation. However, excluding the case of Pokhara, thirty-five additional classrooms are seen as necessary by 1976.[1] These classrooms include five additional schools (fifteen rooms), two re-locations (six rooms) and fourteen rooms required on account of amalgamation (area C, three rooms; D, three; G, three; K, four; and L, one). It is also recommended that nine schools will be phased out by 1976.

The schools affected and the action to be taken are summarized in Table 40.

It may also be seen from Table 39 that permission might be given exceptionally to twenty-nine of the forty-six schools of below fifty enrolment at 1971, to continue to cater for grades I–V for remoteness reasons. These schools are as follows:

Area

D Basundhara (Majhgaon), Himalaya (Shyaklung), Gyanjyoti (Shyaklung), Bhurtel (Majhathana), Sova (Bhgawatitar);
E Banchandrakala (Thuloswara), Dhanbasis (Thakgaon), Siddha (Taprang), Parche Nalku (Parche);
F Rastriya (Arwa);
G Sita (Armala Patale), Narayani (Armala Patale), Kalika (Kahumayalbot);
H Barahi, Navin Vala Bikash and Kiran (Bhurjungkhola), Jyoti (Garlang);
I Anna Purna (Upallodhachowk);
J Saraswati, Ghalel and Gauri (Ghalel); taking account of Ghalel M.S. also;
K Himalaya (Bhichuk), Himalaya (Upallo Hemja);
L Sitala (Patnethok), Siddha and Sarasnati (Ramjadeurali);
N Ratra (Gyarjati);
O Makanna (Chapakot), Ananda (Pumdi).

The proposals are illustrated on Map 9. It may be seen here that the scheme represents a net decrease of four first-

1. The aim in feasible circumstances is to provide a three-classroom school—one room per grade and per teacher; estimate of places required because of present over-utilization is excluded.

TABLE 39. Schools and classrooms required at 1976 under First Scheme

	1971					1976						
	No. of schools			Pupil-places			Schools		Change in schls. from 1971			
Area	1–50	50+	Total cl. rms.	at 30 per cl. rm.	at 40 per cl. rm.	Enrolment tgt. I–III	I–V	I–III	+	–	Additl. cl. rms. reqd.	1981 Enrolment target I–III
A	(Treated separately)											
B	1	8	20	600	800	543	—	9	1	1	3	637
C	3	14	64	1 920	1 760	699	—	17	1	1	6	852
D	5	9	42	1 260	1 680	619	5	8	—	1	—	715
E	6	6	27	810	1 080	510	4	7	—	1	—	602
F	1	4	19	570	760	251	1	4	—	—	—	302
G	8	5	19	570	760	521	3	8	—	2	—	601
H	4	7	25	750	1 000	623	4	6	—	1	—	720
I	1	5	13	390	520	275	1	5	—	—	—	333
J	3	4	13	390	520	391	3	4	—	—	—	457
K	3	11	29	870	1 160	588	2	12	1	1	6	744
L	7	7	48	1 440	1 920	501	3	10	—	1	—	664
M	—	6	21	630	840	362	—	7	1	—	3	452
N	1	5	23	690	920	358	1	5	—	—	—	452
O	3	8	38	1 140	1 520	454	2	10	1	—	3	540
TOTAL	46	99	401	12 030	15 240	6 695	29	112	+5	–9	21	8 071

TABLE 40. Reorganization of first-level schools under First Scheme

Area	Additional school at:	Relocation: of:	Relocation: at:	Closing of:	To amalgamate at:
B	Rithepani (Sishuwa)			Jan Prakash, 67[1] (Bhandra Dhik)[2]	(c) Gogan, 55 (Rupakot & new location)
C	Dotelkuna (Deurali)	Gogan (Rupakot)	Sishuwa (near highway)	Gaun Farka, 50 (Dotelkuna)	Bhairabi, 42 (Khadagaun)
D				Gogitari, 78 (Chiplenti)[2]	Sarbajyoti, 69 (Begnash)
E				Bhumeswari, 13 (Thakgaon)	Baraha, 83 (Naudanda)
G				Mahendra M/H, 41, primary section (Ryalechaur)	Chinnidanda, 110 (F.C.E. No. 1)
				F.C.E. No. 3,[3] 28 (Mahad Gaunda)[2]	F.C.E. No. 4, 60 (Daduwa Kherka)
H				Lamachour M/H, 70, primary section,	Akala, 115 (Upallo Lamachour)
K	Bhichuk (Naga)	Amar Jyoti (Pokhari)	Midway site, Jhagade and Pokhari	Udaya, 47 (Dhampus)[2]	Amar Jyoti, 87 (Pokhari) (new location)
L				Thati, 19 (Deurali)	Saraswati, 35 (Dabang)
M	Paudur Sera Chaur (Dharapani)				
O	Patale (Pumdi)				

1. Figures indicate enrolment in 1971.
2. For nearness reasons.
3. F.C.E. = schools established under the Free and Compulsory Education Scheme.

level schools (excluding Pokhara) but it also involves the provision of thirty-five additional classrooms and the closing of eighteen for non-viability. However, a scheme which provides for such additional accommodation despite the big decrease in enrolments from 12,798 in 1971 to 8,124 in 1976 can hardly be considered viable even if the aims of rationalization of location and equalization of opportunity are fulfilled. Thus, the suggestion made earlier, that the participation targets set for the first level under this scheme are not sufficiently ambitious, is again reinforced when looked at from the supply side.

ii. Second level

The proposals based on the First Scheme targets are summarized in Table 41. Here, projected enrolments for grades IV–VII and VIII–X are fitted against places actually supplied by the 1971 network to show the total places by area apparently required in 1976.

Although the network for the capital, Pokhara, is to be treated separately it must, nevertheless, be taken into account here since 47 per cent of second-level pupils were enrolled there in 1971. It is obvious that the enrolment projected for Pokhara is far too low, based as it is on the average participation for the district. In fact, it is likely that about half the total estimated enrolment of 4,891 would be accommodated in the capital, thus indicating that the additional accommodation required to meet the enrolment targets in second-level schools throughout the district to cater for the remaining pupils is not very great.

However, looking at the development of the network on the basis of demographic and communications conditions, and taking the other location criteria into consideration, a different system of supply may be proposed. Thus, the proposals summarized in Table 41 represent a compromise between the pattern of the existing network and the various aims included in the reform. These proposals were finally made with reference to the potential grade IV–VII and VIII–X enrolment at 1976 under the First Scheme as shown by village *panchayat* on Map 10.[1] The actual network proposals are illustrated on Map 9 so as to relate them to the first-level system.

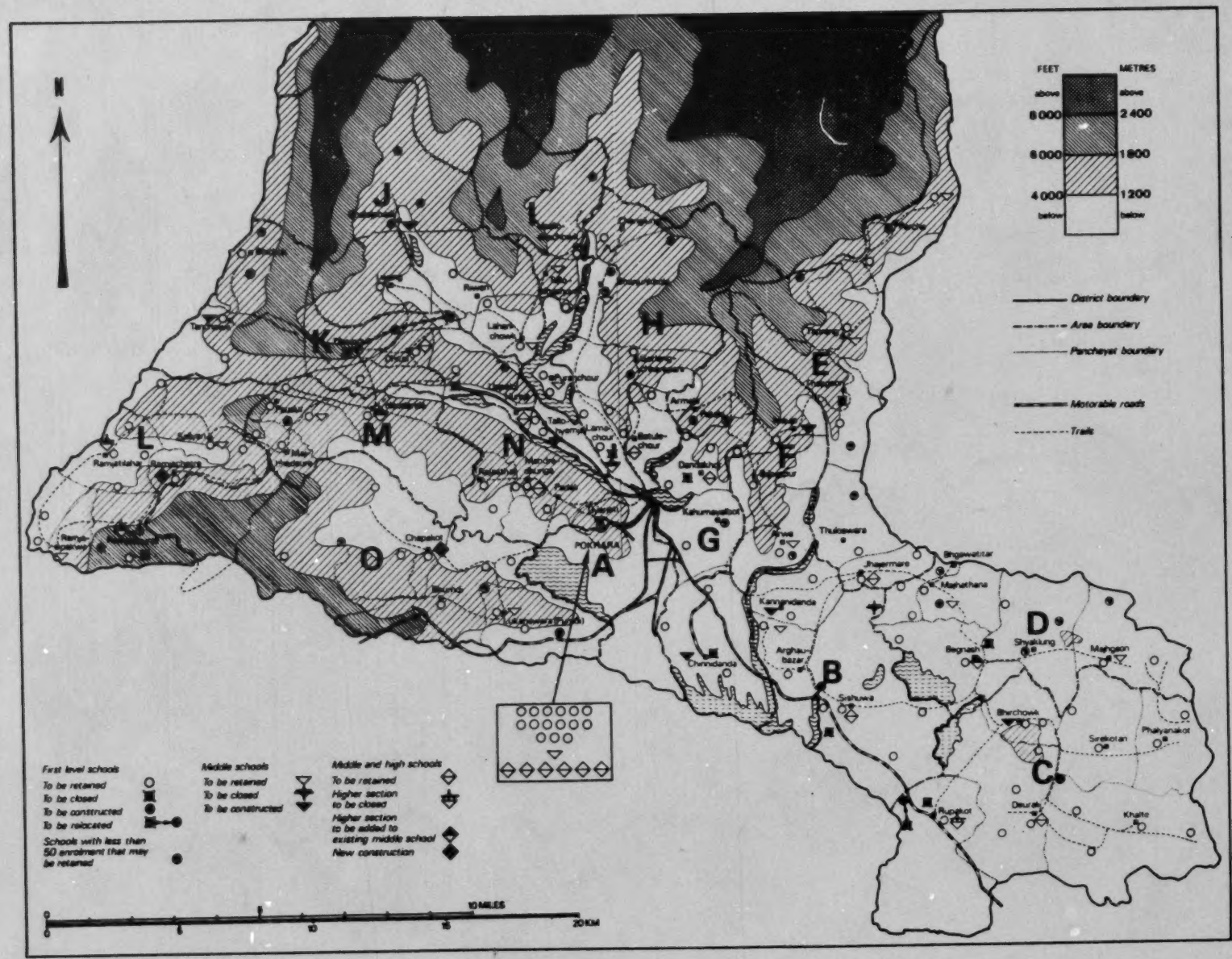
It is shown in Table 41 that a total of twenty-five middle and twelve middle/high schools are recommended for 1976, a net increase of seven middle (but no middle/high) schools over 1971. This development represents, however, an addition of seven middle and two middle/high schools, closing of two middle schools and a change of middle/high to middle for four schools and middle to middle/high for two schools.

Additional schools[2]*:*

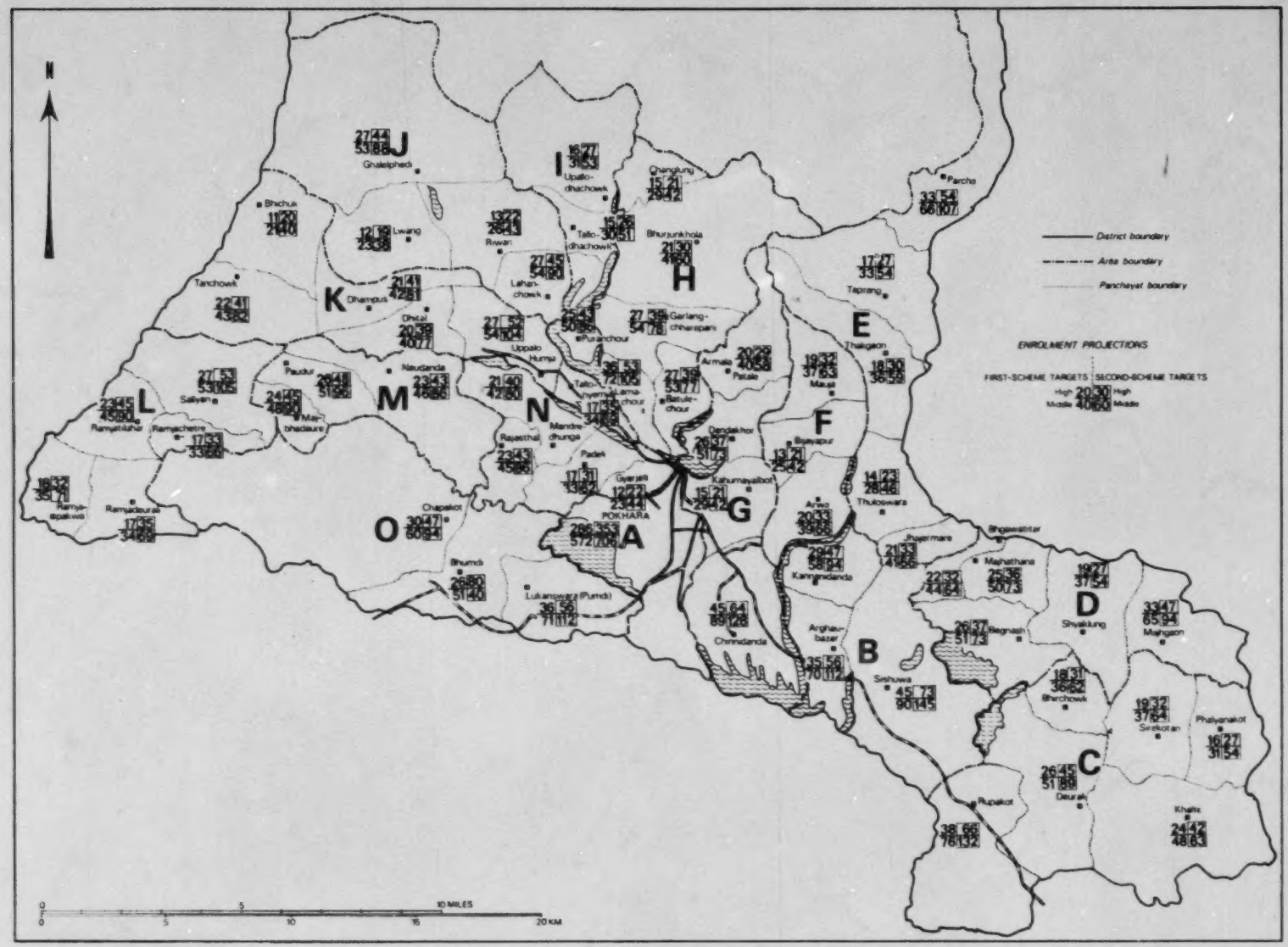
Middle schools: Kannanidanda (B), Bhirchowk and Sirekotan (C), Mauja (F), Chinnidanda (G), Ghalelphedi (J)[3], Tanchowk (K);

Middle/high schools: Ramjachetre (L), Chapakot (O).

1. Projected grades IV–VII and VIII–X enrolment for 1976 under the Second Scheme are also shown on this map for comparison.
2. Schools are given by village *panchayat* and exact locations are not named.
3. To be located between Ghana and Lwang, probably near the market place.



MAP 9. *Rationalized school network: First (Nepalese) Scheme*



MAP 10. *Potential second-level enrolments, First and Second Schemes*

TABLE 41. Summary of First Scheme proposals for second-level network at 1976

Area	1971						1976						Change 1971–76					
	Middle VI–VIII		Middle/high IX–X		Total		Enrolm. target (First Scheme)			Apparent 2nd level places required	Justified by targets[1]		Proposed		Addtl. schls.		Schools to close		Change of status	
	Schls.	Enrolm.	Schls.	Enrolm.	Schls.	Enrolm.	IV–VII	VIII–X	IV–X		M	M/H	M	M/H	M	M/H	M	M/H	M to M/H	M/H to M
B	2	90	1	200	3	290	218	109	327	– 37	2	1	2	1	1	—	1	—	—	—
C	—	—	2	339	2	339	279	141	420	– 81	1	2	3	1	2	—	—	—	—	1
D	3	205	—	—	3	205	247	125	372	–167	—	2	2	1	—	—	—	—	—	—
E	2	62	1	104	3	166	204	103	307	–141	2	1	2	1	—	—	—	—	—	—
F	1	59	—	—	1	59	101	52	153	– 94	2	—	2	—	—	—	—	—	—	—
G	—	—	1	123	1	123	209	106	315	–192	2	1	1	1	—	—	—	—	—	—
H	1	33	2	284	3	317	249	126	375	– 58	—	2	2	1	—	—	—	—	1	—
I	2	86	—	—	2	86	111	56	167	– 81	2	—	2	—	—	—	—	—	—	—
J	1	36	—	—	1	36	156	79	235	–199	1	1	2	—	—	—	—	—	—	—
K	1	36	2	275	3	311	234	118	352	– 41	—	2	1	2	—	—	1	—	—	—
L	2	104	2	195	4	299	200	102	302	– 3	2	1	4	1	—	1	—	—	2	—
M	2	116	—	—	2	116	145	73	218	–102	—	1	1	1	—	—	—	—	—	1
N	—	—	1	34	1	34	143	73	216	–182	—	1	—	1	—	—	—	—	—	—
O	1	55	—	—	1	55	182	92	274	–219	1	1	1	1	—	1	—	—	—	—
TOTAL	18	882	12	1 554	30	2 436	2 678	1 355	4 033	–1 597	15	16	25	12	7	2	2	—	4	2
A	1	56	9	2 084	10	2 140	572	286	858	+1 282										
	19	938	21	3 638	40	4 576	3 250	1 641	4 891	–315										

1. On a population basis.

Schools for phasing out:

Middle schools: Khudi (Sishuwa) (B), Babiyaghar (Tallo-hyemja) (K).

Change of status:

Middle/high to middle school: Raja Chautara (Rupakot) (C), Lamachour (H), Tila-har Ramja (Ramjatilahar) (L), Ramjadeurali (Ramja-deurali) (L).

Middle to middle/high school: Chiflenti (Begnash) (D), Naudanda (M).

Additional accommodation required (excluding Pokhara) is fifty classrooms (some 1,250 places) at the schools listed, comprising twenty-eight and fourteen for the seven middle and two middle/high schools respectively, and eight as extensions for the two upgraded middle schools.

The most important feature of the scheme is the dispersion of many small, scarcely viable middle schools in remote areas to reduce inequality of opportunity. However, as for the first-level proposals, it is also obvious here that the original enrolment targets set under the First Scheme are not sufficiently high to continue the dynamic of enrolment growth for either first- or second-level education.

B. SECOND SCHEME

In view of the shortcomings found in the First Scheme, the strategy employed in this Second Scheme is to look globally at the first and second levels and to follow the dynamic of enrolment growth while attempting to utilize existing accommodations as fully as possible.

Thus, participation targets considered feasible for first-level education were set to yield grade I–III enrolment in 1976 (12,982) about equal to that of pre-reform kinder-garten–grade V (12,798) so that existing primary accom-modation (such as it is) might be fully utilized. The problem then turns out to be rather one of developing a balanced middle and middle/high second-level network to cater for grade IV–X in the reformed situation instead of VI–X as previously, while attempting to reduce inequality of opportunity.

The problem of reorganization to meet the structural reform while allowing for enrolment growth may then be summarized numerically as in Table 42.

It is intended to make proposals for the full network which will facilitate quick and efficient implementation of the structural reform while meeting the other criteria imposed. The proposed reorganization will be discussed in the remainder of this section.

i. First level

It would seem that the first-level network, which catered for 12,798 pupils in 1971, should be capable, without large-scale development, of accommodating 12,982 primary pupils in 1976. Thus, the network proposed in the First Scheme, since it incorporates rational location in accor-dance with demographic conditions and communications and provides for an increase of twenty-nine classrooms (net) above the 1971 level, may be taken as a point of departure to test this initial proposition.

TABLE 42. Summary of reorganization from a '5-3-2' to a '3-4-3' system

Grade	1971: '5-3-2' Enrolment		No. of schools	1976: '3-4-3' Enrolment	Grade
Kinder-garten	2 362				
I, II, III	7 145	12 798	160 primary	12 982	I, II, III
IV, V	3 291				
					IV, V
VI, VII, VIII	938		19 middle	5 195	VI, VII
IX, X	3 638		21 middle/high	2 601	VIII, IX, X
TOTAL	17 374			20 778	

Accordingly, the network proposed in the First Scheme, even at thirty pupil-places per classroom, seems capable of accommodating not only the 1976 enrolment, but also that for 1981 as shown in Table 43. However, it may be seen from the same table that, looked at by area, some deficits are apparent. Furthermore, when the likely pattern of uneven participation and the exceptional provision of grades IV and V in small, remote schools are taken into account, additional accommodation in areas B, E, G, H, I, J and K seem necessary if the aim of thirty pupils per classroom is to be achieved. Estimates of further classrooms required by area to be distributed as extensions to certain schools are also included in Table 43.[1]

Thus, in this Second Scheme, in contrast to the first one, it is seen that available accommodation is very fully utilized and it is possible to phase in the structural reform at least at the first level with a relatively small expansion of the system. The network proposed, therefore, is that illustrated on Map 11, which is the same as that for the First Scheme given in Map 9 with the addition of sixty-nine classrooms (including two re-located schools) distributed by area as shown in Table 43, and is capable of accommodating the 12,982 pupils estimated for 1976.

ii. Second level

Because of the much higher enrolment target under the Second Scheme, as shown in Table 44 the total number of places apparently required at 1976 is quite large (3,220 net, including Pokhara) when compared with that indicated under the First Scheme. It is obvious that a good deal of second-level expansion is needed.

Again, it is necessary to consider the supply position in Pokhara while making proposals for the rest of the District, since the capital (despite the projections) is likely to accommodate about 45 per cent at least of second-level pupils in 1976 (47 per cent in 1971). It was stated when setting an even target for enrolment throughout the district that, while the overall average was acceptable, the estimate was noticeably too low for Pokhara and most certainly too high for such low participation areas as J–N.

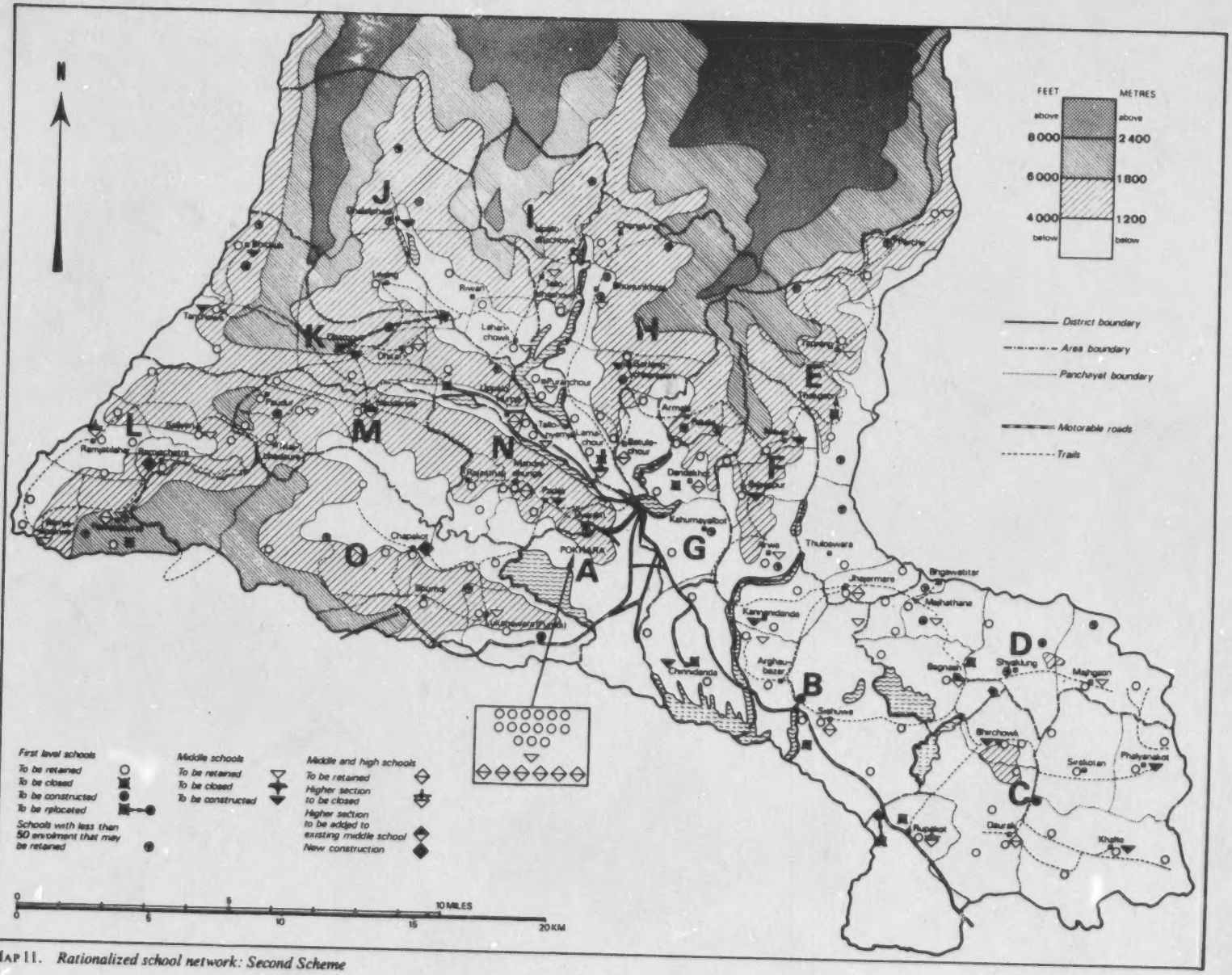
With this in mind and as a follow-up to the First Scheme proposals (since these were based on demographic and communications' conditions together with reform and

1. Estimates are made on the basis of deficits in pupil-places shown in the table and after reference to enrolment conditions in the twenty-nine schools to retain grades I–V, to the general participation pattern and to space utilization rates in 1971.

TABLE 43. Second-Scheme enrolment for 1976 applied to number of pupil-places in First-Scheme network

Area	1971 class-rooms	First Scheme: 1976 classrooms At new schools	As extens.	Total	First Scheme: 1976 pupil-places At 30 per classroom	At 40 per classroom	Second Scheme: Enrolm. targets 1976	1981	Surplus or deficit pupil-places per 1976 enrolm. target: At 30 per classroom +	−	At 40 per classroom +	−	Classrooms required over first scheme	Classrooms required over 1971
A	(Treated separately)													
B	20	3		23	690	920	877	943		−187	43		7	10
C	64	3	1	68	2 040	2 720	1 210	1 299	830		1 510			4
D	42		2	44	1 320	1 760	896	964	424		864			2
E	27			27	810	1 080	831	893		−21	249		3	3
F	19			19	570	760	429	460	141		331			
G	19		3	22	660	880	751	809		−91	129		5	8
H	25		3	28	840	1 120	902	969		−62	218		4	7
I	13			13	390	520	474	509		−84	46		3	3
J	13			13	390	520	649	698		−259		−129	10	10
K	29	3	4	36	1 080	1 440	1 123	1 207		−43	317		2	9
L	48		1	49	1 470	1 960	1 000	1 075	470		960			1
M	21	3		24	720	960	681	733	39		279			3
N	23	3		26	780	1 040	681	731	99		359			3
O	38			38	1 140	1 520	714	768	426		806			
TOTAL	401[1]	15	14	430	12 900	17 200	11 218	12 058	2 429	−747	6112	−129	34	63

1. Six classrooms for two schools to be re-located not included.



MAP 11. *Rationalized school network: Second Scheme*

TABLE 44. Apparent second-level pupil-places required in 1976

Area	1971						1976							
	Middle, VI–VIII		Middle/high, IX–X		Total		Enrolment target Second Scheme			Apparent 2nd level places reqd.	Additl. places per First Scheme[1]	Further additl. places Second Scheme	Apparent net places required	
	Schls.	Enrolm.	Schls.	Enrolm.	Schls.	Enrolm.	IV–VII	VIII–X	IV–X				+	–
A	(Treated separately, see below)													
B	2	90	1	200	3	290	351	176	527	–237	100	75		– 62
C	—	—	2	339	2	339	484	243	727	–388	200	100		– 88
D	3	205	—	—	3	205	358	178	536	–331	100	—		–231
E	2	62	1	104	3	166	332	167	499	–333	—	—		–333
F	1	59	—	—	1	59	171	86	257	–198	100	100	+2	
G	—	—	1	123	1	123	301	151	452	–329	100	—		–229
H	1	33	2	284	3	317	362	182	544	–227	—	100		–127
I	2	86	—	—	2	86	190	96	286	–200	—	—		–200
J	1	36	—	—	1	36	259	130	389	–353	100	—		–253
K	1	36	2	275	3	311	450	226	676	–365	100	100		–165
L	2	104	2	195	4	299	401	198	599	–300	175	—		–125
M	2	116	—	—	2	116	272	136	408	–292	100	—		–192
N	—	—	1	34	1	34	272	136	408	–374	—	100		–274
O	1	55	—	—	1	55	286	143	429	–374	175	—		–199
TOTAL	18	882	12	1 554	30	2 436	4 489	2 248	6 737	–4 301	1 250	575	+3	–2 748
A	1	56	9	2 084	10	2 140	706	353	1 059	+1 081				
GRAND TOTAL	19	938	21	3 638	40	4 576	5 195	2 601	7 796	–3 220				

1. Classroom taken as twenty-five pupil-places.

location criteria), the apparent net effect on availability of pupil-places following some further proposals is shown in Table 44.

Here there is an apparent shortfall of some 2,676 places, even with the provision of this further accommodation. However, as already stated, the IV–X enrolment in Pokhara is likely to be some 3,600 (40–45 per cent) in 1976, that is some 2,500 more than the 1,059 shown in the table. Accordingly, with the transfer of this apparent shortfall to Pokhara, the Second Scheme proposals seem adequate to meet the overall requirement of pupil-places in the rest of the district. It is to be noted that a relatively large expansion will be required in Pokhara.[1] Some further classroom provision may also be required in areas G, O and B, which have shown fairly high participation rates, and in J–N, all of which show fairly high apparent shortages of pupil-places.

The further proposals made under the Second Scheme, the effects of which were summarized in Table 44, are as follows:[2]

Additional middle schools: Phalyankot and Khalte (C) (but not Sirekotan), Bijayapur (F), Garlang (H), Dhampus and Bhichuk (K), Padeli (N);
Retain as middle schools: Khudi (B), Tallohyemja (K);
Retain as middle/high school: Ramjadeurali (L).

Having fitted projected enrolments against existing pupil-places and assessed additional accommodation requirements, then by an iterative process, taking the various location factors mentioned earlier into account, the final proposals for the second level under the Second Scheme are illustrated in Map 11 (together with those for the first level).

The proposals made under this Second Scheme should fulfil the following aims:
(*a*) Rationalize the existing network in accordance with demographic and communications conditions;
(*b*) Reduce inequalities in educational supply;
(*c*) Maintain the dynamic of enrolment growth;
(*d*) Utilize existing accommodation as fully as possible while allowing for further expansion;
(*e*) Facilitate the phasing-in of the educational reform.

6. The case of Pokhara

Pokhara, with a population of 20,611 in 1971, holds a dominant position in education in the district. A total of 4,732 first- and second-level pupils, making up 23 per cent of the city population, were enrolled in fifteen primary, one middle and nine middle/high schools in 1971. First-level pupils enrolled in that year, 2,592, accounted for 20 per cent of all enrolment at the first level in the district; as was seen in the previous section, the 2,140 pupils enrolled account for 47 per cent of all second-level pupils in Kaski.

It has been mentioned earlier that the population of Pokhara must certainly expand much more rapidly than the annual average of 1.5 per cent and may well increase by 50 per cent during the next decade. Thus, a rapid expansion of the education system must also take place. Proposals for the development of the school system must be prepared

1. Thus the pupil-places required in Pokhara in 1976, based on expansion alone and without considering the present level of utilization, are perhaps up to 1,500, i.e. 2,676 less the apparent surplus of 1,081.
2. It must be mentioned that expansion of the middle school network, rather than making extensions to the school network proposed in the First Scheme, is in pursuit of local policy rather than for economic rationalization reasons.

within the framework of the city plan and in consultation with the various interests concerned, including the city engineer, educational administrators, development bodies, councillors and others.

In the preparation of the city plan, it is essential to zone adequate sites for the location and extension of schools so that they are easily accessible to residential areas. In this way, maximum utilization of school buildings, equipment and facilities by both pupils and community alike will be facilitated. Adequate space should be planned for experimentation and recreation.

Of the fifteen primary schools in Pokhara in 1971, only one had an enrolment below 100, two had enrolments between 100 and 150, seven in the range 150–200 and five were between 200–250. As was seen in looking at the effects of introducing the '3–4–3' reform in the rest of the district, confining the grades taught to I–III will leave places for much greater admission. But with the heavy over-utilization of space at present and the likely increase in population, much more accommodation will be required.[1]

The basic policy of at least one primary school in each of the thirteen wards remains. Since the schools are not large, expansion is most likely to be by extension. A three-stream school of some 300 pupils would form a reasonable general aim for the planner.

The enrolment sizes of the ten second-level schools in 1971 in descending order were as follows: 570, 517, 357, 162, 158, 110, 88, 82, 56 and 30. As was seen in the last section, the pressure for expansion due to the reform is likely to come at this level where some 1,500 additional places above the 1971 figure may be required by 1976. This poses perhaps one of the most serious problems for the Education Office in Pokhara.

It is necessary that a separate study of this particular problem and of the development of the first-level system be undertaken in Pokhara. It must be made in the context of the city development plan as indicated earlier.

With the undoubted rapid increase in enrolments to be expected and the consequent pressure on accommodation, consideration should be given in some instances in the city to double-shift operation of schools, at least as a temporary measure.

7. Teacher requirements

A. GENERAL

Having fitted existing accommodation against projected enrolments under the First and Second Schemes in post-reform conditions, and made proposals with regard to location and additional space required, it is appropriate now to fit existing teaching staff against projected enrolments for 1976. A simple arithmetical calculation of teacher requirements as shown in Table 45, on the basis of norms laid down—minimum pupil/teacher ratios of 30:1 and 25:1 for first and second levels respectively with 75 per cent trained teachers—is no more than a guideline as to the gap which exists.

A clearer picture of the impact of the structural reform on the utilization of existing staff under the two schemes proposed emerges from Table 46.

Here, it is seen that if the reform had been immediately implemented, the main effect would have been the move-

1. The space utilization rate (at thirteen sq. ft. per pupil) was seen in Chapter II to be 351 per cent in 1971.

TABLE 45. Teachers required by level at 1976 for the First and Second Schemes on the basis of norms laid down

	First level					Second level				
			Teachers					Teachers		
	Enrolm.	P/T ratio	Trd.	Untrd.	Total	Enrolm.	P/T ratio	Trd.	Untrd.	Total
1971	12 798	28.3	168	289	457	4 576	18.5	51	197	248
1976: First Scheme	8 124	30.0	204	67	271	4 891	25.0	147	49	196
1976: Second Scheme	12 982	30.0	325	108	433	7 796	25.0	234	78	312
First Scheme: surplus			—	222	186			—	148	52
deficit			36	—	—			96	—	—
Second Scheme: surplus			—	181	24			—	119	—
deficit			157	—	—			183	—	64

NOTE Target of 75 per cent trained teachers applied in 1976.

TABLE 46. Effect of structural reform on enrolments and the utilization of teachers[1]

	First level			Second level				
				Enrolment				
	Enrolment	1971 teachers	P/T ratio	1st stage	2nd stage	Total	1971 teachers	P/T ratio
1971: '5-3-2' structure	12 798	457	28.3	3 103	1 473	4 576	248	18.5
1971: '3-4-3' structure	9 844	457	21.5	5 487	2 376	7 863	248	31.7
1976: First Scheme, '3–4–3'	8 124	457	17.8	3 250	1 641	4 891	248	19.7
1976: Second Scheme, '3–4–3'	12 982	457	28.4	5 195	2 601	7 796	248	31.4

1. The premise that the existing staff continues to be employed is here used.

ment (literally) of about one-quarter of the first level (3,291 pupils, grades IV and V) to second level/first stage, from which grade VIII would also have shifted to the second stage. The net effect on the second level would have been an increase of 3,287 pupils (over 70 per cent), of whom 2,384 in the first and 903 in the second stage.[1] On the one hand, existing second-level teachers could not have coped with this sudden wave of enrolments and, on the other, first-level staff would have become grossly under-utilized unless there had been a sudden influx of primary pupils.

Of course, it must be said that the reform cannot be implemented so suddenly and must be phased-in as grades flow through the system.[2] The problem which remains to be solved is to assess teacher requirements in 1976 when the reform has been fully phased-in, while respecting the norms laid down and the present deployment of teachers.[3]

B. FIRST LEVEL

It will be remembered that the accommodation proposals shown earlier sought a balance between equalization of opportunity for remote areas and rational location, two aims which are often conflicting. The effects of these proposals on teacher requirements are summarized in Table 47. Thus, five additional teachers are required for small new schools while fifteen teachers are released for redeployment due to amalgamation and because of the reform. It may be seen that the new schools can be staffed by teachers released through amalgamation in their own areas in three instances but, on balance, ten teachers remain for employment elsewhere. It is also noteworthy that the major release of teachers is in the small schools of less than fifty enrolment, which were seen earlier to have the very low pupil/teacher ratio of 19.2:1.

In Table 48, existing staff are fitted by area against 1971 enrolments as adapted to the reform structure and projected enrolments under the First and Second Schemes. It is again obvious that, under the First Scheme enrolment targets, existing staff would be unacceptably under-utilized at an average pupil/teacher ratio of only 18.2:1. While the pupil/teacher ratio under the Second Scheme at 29.0:1 is somewhat less than the norm of 30.0:1 it shows, nevertheless, that there is sufficient staff to meet the projected 12,982 enrolment; with normal enrolment growth and teacher turnover it should be possible to reach the ratio norm of 30.0:1 fairly readily. The number of teachers required to achieve the norm is 433, that is twenty-four less than the present figure.

But while sufficient teachers are available to meet the targets of the Second Scheme the fact remains that 289 of these are untrained. A major crash-programme of short intensive courses for at least 157 of these teachers must be implemented if the target of 75 per cent trained staff is to be achieved.

C. SECOND LEVEL

The net effect of proposals for the second level made earlier for both the First and Second Schemes is to expand the school network considerably. In this instance, rationalization yields no release of teachers; on the contrary, many additional teachers will be required.

In Table 49, then, existing staff is fitted against 1971 enrolments under '3-4-3' conditions, and projections for the First and Second Schemes. The great impact of the structural change throughout the district is evident here. It is clear, however, that only the Second-Scheme targets measure up to the order of growth of second-level enrolments brought about by the reform.[4]

1. See Appendix, Tables 3 and 4, for details by area.
2. Phasing-in could have the following rhythm:

	First level					Second level							
1971	I	II	III	IV	V	—	—	VI	VII	VIII	—	IX	X
1972	I	II	III	IV	—	—	V	VI	VII	—	VIII	IX	X
1973	I	II	III	—	—	IV	V	VI	VII	→	VIII	IX	X

3. It is assumed in analysis throughout this section that first and second levels are quite separate from a staff utilization viewpoint and especially that first-level teachers formerly taking kindergarten-grade V will now be confined to the new first-level grades I–III—with the exception of special permission for retention of grades IV–V in small remote schools.
4. This is in fact verified by application of observed retention rates to grades III, IV and V of 1971 which will become the second-level/second-stage grades VII, IX and X in 1976.

TABLE 47. Effect on first-level teacher requirements of accommodation proposals made under First and Second Schemes

		Amalgamation Proposals						
		0–50 schools (1971)			50+ schools (1971)			
Area	Additl. teachers in new schools	Combined enrolm.	Teachers 1971	Teachers for re-deploym.	Combined enrolm.	Teachers 1971	Teachers for re-deploym.	Total teachers for re-deploym.
B	1	—	—	—	112	4	1	1
C	1	92	4	1	—	—	—	1
E	—	96	3	—	—	—	—	—
F	—	151	6	3	—	—	—	3
G	—	88	3	1	—	—	—	1
H	—	—	—	—	185	6	2	2
K	1	134	6	3	—	—	—	3
L	—	54	6	4	—	—	—	4
M	1	—	—	—	—	—	—	—
O	1	—	—	—	—	—	—	—
TOTAL	5	615	28	12[1]	297	10	3	15

1. The change from kindergarten-grade V to grades I–III is considered here.

TABLE 48. Fit of teaching staff to enrolment, taking structural reform ('5-3-2' to '3-4-3'), rationalization and 1976 enrolment targets for the First and Second Schemes into consideration

Area	1971 enrolment: Total KG–V	1971 enrolment: Less IV–V	Estimate of IV–V to stay exceptionally	Net enrolm. KG–III (on 1971 figs.)[1]	1976 enrolment projection[2]: First Scheme	1976 enrolment projection[2]: Second Scheme	1971 teachers	Rationalization adjust.[3]: –	Rationalization adjust.[3]: +	Net teachers
A	2 592	744	—	1 848	1 429	1 764	75	—	—	75
B	988	203	—	785	543	877	27	—	—	27
C	1 329	293	—	1 036	699	1 210	44	—	—	44
D	936	241	51	746	619	896	33	—	—	33
E	737	141	44	640	510	831	27	—	—	27
F	388	102	5	291	251	429	18	—	—	18
G	684	207	28	505	521	751	30	4	—	26
H	943	277	44	710	623	902	37	2	—	35
I	456	123	10	343	275	474	17	—	—	17
J	432	112	—	320	391	649	18	—	—	18
K	856	215	22	663	588	1 123	37	2	—	35
L	793	201	30	622	501	1 000	31	4	—	27
M	443	109	8	342	362	681	13	—	1	14
N	493	142	17	368	358	681	19	—	1	20
O	728	181	—	547	454	714	31	—	—	31
TOTAL	12 798	–3 291	+259	9 766	8 124	12 982	457	–12	+2	447

1. Including IV–V specially retained.
2. The fact that these projections are based on straightforward apparent participation rate of 100 and require adjustment has been taken into account.
3. See previous table.

An apparent shortage of seventy-two teachers is shown on the basis of the pupil/teacher norm of 25:1. A distribution of Second-Scheme 1976 enrolments among schools is shown in Tables 50 and 51 for comparison with the position in 1971. Using the pupil/teacher ratio of 25:1 by area, a total of 311 teachers are seen to be needed in 1976, of which 89 for middle schools and 222 for middle/high schools; that is, an overall increase of sixty-three over 1971 (as against seventy-two estimated in Table 49). The ratio may be surpassed in Pokhara, where it is likely that some 45 per cent of second-level pupils will be enrolled, but it may not be so easily attained throughout the district. However, it is certain that the previous low pupil/teacher ratio of 15.1:1 for the middle schools can be greatly improved, though it will not be easy to reach the figure 25.2 shown in the table.

Thus, the increase in teaching staff required is indeed fairly large. In addition, as for first level, a major short-course training programme for untrained teachers is necessary; some 183 untrained teachers must follow such courses if the target of 75 per cent trained teachers is to be achieved.

TABLE 49. Fit of existing second-level teaching staff against 1971

Area	1971 enrolment with '5–3–2': VI–VIII	IX–X	VI–X
A	1 217	923	2 140
B	217	73	290
C	219	120	339
D	205	—	205
E	116	50	166
F	59	—	59
G	91	32	123
H	228	89	317
I	86	—	86
J	36	—	36
K	213	98	311
L	215	84	299
M	116	—	116
N	30	4	34
O	55	—	55
TOTAL	3 103	1 473	4 576

1. Excluding IV–V retained specially at remote first-level schools.
2. Figures rounded.

TABLE 50. School networks and staffing in 1971 and estimated for 1976 under Second Scheme: middle schools

Area	School in 1971	Additions by 1976	1971 Enrolm.	1971 Teachers	1976 Enrolm.	1976 Teachers
A	POKHARA		56	3	(Included in Table 51)	
B	ARBHAUN		53	3		
	SISHUWA		37	3	200	9
		Kannanidanda	—	—		
C		Bhirchowk	—	—		
		Phalyanakot	—	—	300	12
		Khalte	—	—		
		Rupakot (M/H to M)	—	—		
D	MAJHGAON		54	3		
	BEGNASH (to M/H 1976)		65	4	196	6
	MAJHATHANA		86	4		
E	TAPRANG		37	3	150	6
	PARCHE		25	2		
F		Mauja	—	—		
		Bijayapur	—	—	150	6
	ARWA		59	4		
G		Chinnidanda	—	—	100	4
H	BHURJUNKHOLA		33	4		
		Garlang	—	—	150	6
		Lamachour	—	—		
I	PURENCHOUR		52	3	150	6
	TALLODHACHOWK		34	3		
J	LAHANCHOWK		36	5	150	6
		Ghalelphedi	—	—		
K	TALLOHYEMJA		36	2		
		Tanchowk	—	—	200	8
		Dhampus	—	—		
		Bhichuk	—	—		
L	SALLYAN		44	4		
	RAMJAPAKWA		60	3	200	8
		Ramjatilahar	—	—		
M	PAUDAR		57	3	100	4
	NAUDANDA (to M/H 1976)		59	3	—	—
N		Padeli	—	—	100	4
O	BHUMDI		55	3	100	4
	TOTAL		938	62	2 246	89
			P/T ratio	15.1:1	P/T ratio	25.2:1

'3-4-3' enrolment and enrolment projections for First and Second Schemes

1971 enrolment with '3–4–3' IV–VII[1]	VIII–X	IV–X	Net increase	First Scheme 1976 IV–X	Second Scheme 1976 IV–VII	VIII–X	IV–X	Teachers 1971	2nd Scheme teachers reqd. at P/T ratio 25:1[2]	Apparent shortage
1 538	1 346	2 884	744	858	706	353	1 059	95	43	+52
360	133	493	203	327	351	176	527	14	22	− 8
449	183	632	293	420	484	243	727	16	30	−14
341	54	395	190	372	358	178	536	11	21	−10
193	70	263	97	307	332	167	499	15	20	− 5
141	15	156	97	153	171	86	257	4	11	− 7
246	56	302	179	315	301	151	452	7	19	−12
405	145	550	233	375	362	182	544	20	22	− 2
178	21	199	113	167	190	96	286	6	12	− 6
143	5	148	112	235	259	130	389	5	16	−11
352	152	504	193	352	450	226	676	17	28	−11
326	144	470	171	302	401	198	599	25	24	+ 1
180	37	217	101	218	272	136	408	6	17	−11
150	5	155	121	216	272	136	408	4	17	−13
226	10	236	181	274	286	143	429	3	18	−15
5 228	2 376	7 604	3 028	4 891	5 195	2 601	7 796	248	320	−72

TABLE 51. School networks and staffing in 1971 and estimated for 1976 under Second Scheme: middle/high schools

Area	School in 1971	Additions by 1976	1971 Enrolm.	1971 Teachers	1976 Enrolm.	1976 Teachers
A	POKHARA (9 schools)		2 084	92	3 500	140
B	SISHUWA		200	8	250	10
C	RUPAKOT (to M 1976)		112	6	—	—
	DEURALI		227	10	250	10
D		Begnash (M to M/H)	—	—	150	6
E	JHAJERMARE		104	10	150	6
G	DANDAKHOR		123	7	150	6
H	LAMACHOUR (to M 1976)		33	5	—	—
	BATULECHOUR		251	11	275	11
K	DHITAL		93	6	100	4
	UPALLOHUMJA		182	9	200	8
L	RAMJATILAHAR (to M 1976)		73	10	—	—
	RAMJADEURALI		122	8	125	5
		Ramjachetre	—	—	100	4
M		Naudanda (M to M/H)	—	—	100	4
N	MANDREDHUNGA		34	4	100	4
O		Chapakot	—	—	100	4
	TOTAL		3 638	186	5 550	222
			P/T ratio	19.6:1	P/T ratio	25.0:1

8. Financing of proposals (1976)

A. RECURRENT COSTS

Costs of operating the education system in 1971 are compared in Table 52, with costs of the First and Second Schemes.

i. First level

Here it may be seen that in the Second-Scheme unit cost per pupil is reduced from Rs.41.3 in 1971 to Rs.40. Thus, despite the supply of some educational facilities relating to the equalization of opportunity, unit cost reduction is achieved through the better utilization of teachers, as was discussed in the previous section. The table also shows a large increase in unit cost per pupil under the First Scheme.

Total recurrent cost for the Second Scheme is Rs.519,132 (at current 1971 prices) as against Rs.528,600 in 1971, a decrease of Rs.9,468. Of course this scheme includes proposals for the provision of thirty-five additional classrooms, the cost of which it is difficult to assess. However, it is very likely that an annual saving of Rs.9,468 is more than the annuated capital required to provide the accommodation.

The total recurrent cost for the First Scheme is the same because an equivalent teaching staff must be employed; but with only 8,124 pupils, as against over 12,000 in 1971, unit cost is inevitably higher.

ii. Second level

It may also be seen from Table 52 that there is a substantial reduction in unit cost per pupil under the Second Scheme from Rs.173.9 to Rs.128. Again this is achieved through a more efficient utilization of teachers; it was seen earlier in

TABLE 52. Cost comparison of First and Second Schemes with present system (current 1971 prices)[1]

			Enrolm.	Teachers reqd.	Average p.a. salary (Rs.)	Total teacher cost (Rs.)	Total non-teacher cost (Rs.)	Total recurrent cost (Rs.)	Cost per pupil (Rs.)
1971	Pre-reform	First level (KG–V)	12 798	457	1 103.3	504 200	24 400	528 600	41.3
		Second level (VI–X)	4 576	248	2 663.0	660 424	135 260	795 684	173.9
		TOTAL	17 374	705		1 164 624	159 660	1 324 284	
1976	First Scheme	First level (I–III)[2]	8 124	447	1 103.3	493 175	25 957	519 132	63.9
		Second level (IV–X)	4 891	248	2 663.0	660 424	135 260	795 684	162.7
		TOTAL	13 015	695		1 153 599	161 217	1 314 816	
1976	Second Scheme	First level (I–III)[2]	12 982	447	1 103.3	493 175	25 957	519 132	40.0
		Second level (IV–X)	7 796	311	2 663.0	828 193	169 630	997 823	128.0
		TOTAL	20 778	758		1 321 368	195 587	1 516 955	

1. For equal cost comparison 1971 salaries are used; non-teacher cost taken at 5 and 17 per cent respectively for first and second levels in costing the proposals, on the basis of costs shown in Chapter II.
2. Including kindergarten.

Tables 50 and 51 that pupil/teacher ratios could be increased from the very low level of 15.1:1 in the middle schools and from 19.6:1 in the middle/high schools respectively, towards the norm of 25:1. This is possible because of the big influx of pupils, due especially to the structural reform which now includes grades IV and V in the second level.

It must also be mentioned that at this level there is, too, a reduction of unit cost per pupil under the First Scheme from Rs.173.9 to Rs.162.7. This is accounted for by the fact that somewhat more pupils (4,891 as against 4,576) are catered for at the same total cost.

For implementation of the Second Scheme it was estimated that some 124 additional classrooms (of which sixty in Pokhara) would be required. Here, no saving in annual recurrent expenditure as an offset against the provision of accommodation is available. The total recurrent expenditure of Rs.997,823 under the Second Scheme is higher than the outlay of Rs.795,692 in 1971 due to the very big enrolment expansion to 7,796 as against 4,576. Excluding Pokhara, the major part of accommodation to be provided is to build up a network of middle schools for the equalization of opportunity; they must also be supplied under the First Scheme.

However, in addition to the comparison of unit cost by scheme and level described above, it is necessary to state that the structural reform from '5-3-2' to '3-4-3' has, *per se*, an increasing effect on unit cost. This is because the salaries at second level are much higher than those at first level and now, with the reform, grades IV and V are automatically in the second level. Thus, the costs of pupils of three grades only (I–III) as against five formerly (I–V plus kindergarten) will depend on the lower salaries of first-level teachers, whereas the costs of seven grades (IV–X) as against five before the reform will be related to the higher salaries of second-level teachers.

But it must be added that compensatory effects emerge

TABLE 53. Total estimated accommodation requirements at 1976 under the First and Second Schemes (excluding Pokhara)

	First level				Second level				
	New schls.		Extension classrooms	Total classrooms	New schls.		Extension classrooms	Total classrooms	Total all classrooms reqd.
	No.	Classrooms			No.	Classrooms			
First Scheme									
A								...[1]	
B	1	3	—	3	1	4	—	4	7
C	2	6	3	9	2	8	—	8	17
D	—	—	3	3	—	—	4	4	7
E	—	—	—	—	—	—	—	—	—
F	—	—	—	—	1	4	—	4	4
G	—	—	3	3	1	4	—	4	7
H	—	—	—	—	—	—	—	—	—
I	—	—	—	—	—	—	—	—	—
J	—	—	—	—	1	4	—	4	4
K	2	6	4	10	1	4	—	4	14
L	—	—	1	1	1	7	—	7	8
M	1	3	—	3	—	—	4	4	7
N	—	—	—	—	—	—	—	—	—
O	1	3	—	3	1	7	—	7	10
TOTAL	7	21	14	35	9	42	8	50	85
Second Scheme									
A		As First Scheme, above[2]						...[1]	
B					1	4	—	4	7
C					3	12	—	12	21
D					—	—	4	4	7
E					—	—	—	—	—
F					2	8	—	8	8
G					1	4	—	4	7
H					1	4	—	4	4
I					—	—	—	—	—
J					1	4	—	4	4
K					3	12	—	12	22
L					1	4	—	4	5
M					—	—	4	4	7
N					—	4	—	4	4
O					1	4	—	4	7
TOTAL	7	21	14	35	14	60	8	68	103

1. It has been recommended that a separate study of the situation in Pokhara be made to assess accommodation requirement (among other things); it is estimated that at least sixty additional classrooms will be required at the second level by 1976.
2. Classroom requirements as for First Scheme with further classrooms to be added perhaps in areas B, E, G, H and I.

from the proposals made under the Second Scheme, as was seen earlier. For this reason, too, it is interesting to compare the average unit cost per pupil combining first and second levels as follows: Pre-reform, Rs.76.2; First Scheme, Rs.100.3; Second Scheme, Rs.73.0.

The extent of the compensatory effect under the Second Scheme mentioned earlier is clear here.

Of course the point must also be made that such compensatory effects as are possible in Kaski may not necessarily be possible elsewhere. It will be necessary, therefore, to analyse the overall effects in other districts of implementation of a national, structural reform meant mainly to boost first-level participation, but which has also innately an increasing effect on costs.

B. CAPITAL COSTS

Additional classroom accommodation required for both levels of education in accordance with the First and Second Schemes is summarized in Table 53. It should be mentioned that the figures relate to classrooms for expansion and rationalization only and no account is taken of necessary renovation, further space needed because of over-utilization or non-teaching accommodation.

As was seen in Chapter II, the standard of accommodation at present is generally not good. In the absence of financial aid to the local community for the construction of schools, some system of technical advice on building matters could well be considered. It was envisaged that certain supervisors might receive special training in this regard to offer advice on a standardized type of building. The following main aims should also be pursued:

(*a*) Rational location of schools;
(*b*) Maximum utilization of premises and equipment by pupils and community alike;
(*c*) Provision of sufficient land for experimentation, recreation, expansion and, not least, as a source of income for the schools;
(*d*) Supply of at least minimal teaching equipment in first-level schools and the build-up of modest laboratories and workshops at second-level establishments.

Consideration might also be given to relating a modest capital grant system to the implementation of rationalization proposals. Thus, where amalgamation is proposed, a grant might be given to assist in the provision of additional classrooms at the consolidated schools.

Since schools are constructed mainly through voluntary labour and the donation of funds and materials by local people, it is extremely difficult to estimate the capital costs of the additional accommodation proposed in the schemes, but it has been said that provision of accommodation in the Nepalese circumstances is not a major problem.

C. FINANCING

Points from the Financing Regulations in accordance with the Education Plan 1971–76 are as follows:[1]

First level: government assumes responsibility for the full payment of teachers' salaries;

Second level: government assumes responsibility for the full payment of teachers' salaries in areas designated as remote, 75 per cent of salaries elsewhere if emphasis is on vocational subjects and 75 per cent of salaries in recognized middle schools.

In applying these regulations to Kaski it is found that, in approximate terms, the salaries of half the second-level teachers will be fully financed; the remaining salaries will be three-quarters financed by the local authority.

This means in effect that the totals remaining to be financed locally for both levels of education are Rs.217,821 under the First Scheme and Rs.273,155 under the Second Scheme. It seems as if raising funds of this order locally is feasible since private financing of the first level alone in Kaski in 1971 amounted to Rs.234,000, including land income, donations etc., fees, and voluntary help which contributed 60, 20, 11 and 9 per cent respectively of this sum. The contribution of the local authority (district *panchayat*) was Rs.96,900, again at the first level.

9. Pre-requisites for implementation

Pre-requisites for successful implementation of the Second-Scheme proposals, if decided on, are as follows:

(*a*) Converting enrolment targets into pupils in schools;
(*b*) Retaining as many of them as possible for the duration of the course;
(*c*) Having sufficient and adequate accommodation to receive them;
(*d*) Having sufficient well-qualified staff to teach them.

Turning potential demand into effective demand for education, which is in effect what the first two basic pre-requisites mentioned above involve, will not be easy if the first-level targets of the Second Scheme are to be achieved. In the first instance attitudes of parents to school must somehow be changed. At present a large proportion of them do not see the relevance of schools to their improved well-being or that of their children. In addition, actual outlay (however minimal) and opportunity-costs of sending pupils to school pose serious financial problems for them and it may be necessary to provide for waiving of fees in certain cases. A concerted information and persuasion campaign must be embarked upon involving school staff, supervisors, *panchayat* committees, extension workers and voluntary organizations. This campaign should be supported by well-chosen, practical adult education courses and the highlighting of significant examples of success.

As realistic evidence of intent the school year might be changed to better suit the agricultural calendar:

> '. . . where the school falls down is precisely in its failure to take into account the seasonal cycle of work. When the time comes for planting out the rice, there is a mass exodus of children from the schools.'[2]

But other changes must also take place within the schools to entice and retain pupils. Curriculum development, modernization of teaching methods and the provision of at least minimal teaching aids are basic pre-requisites for both first and second levels. The syllabus must be re-aligned to the problems and real needs of the community. Thus, agri-

1. *National education system plan for 1971–76*, op. cit., p. 52.
2. *Equality of access of women to education*, op. cit., p. 9.

cultural and para-agricultural activities must form the centre-piece around which the curriculum is to be developed:

> '... village life revolves around farming, and agricultural training must be included in education if the school is not to be regarded as being out of touch with the realities of rural life.'[1]

Furthermore, the school should become more open to the community it serves and pupils should be trained in self-help through actual participation in the solution of village problems.

It is appropriate to mention in general terms that the provision of adequate accommodation is not a major problem in the rural parts of Nepal, at least for first-level education. It was seen earlier in Chapter II that the standard of accommodation is low. However, the climate is such for a large part of the year that a good teaching job can be done in very modest buildings. Since the responsibility rests almost solely with the local community for the provision of school accommodation, what is needed is more thorough guidance in construction according to the standard school plan. For this reason, it is necessary that supervisors be specially trained and given responsibility in this regard.

A more serious obstacle to the achievement of objectives is the great shortage of sufficiently qualified teachers with the training required to introduce and develop a curriculum successfully along the lines earlier indicated. Teacher-training courses must be immediately geared to preparing such teachers, in-service courses must be organized to upgrade many of the unqualified staff and higher entry standards to the profession must be set and enforced rigorously.

10. Medium-term development

Decisions on longer-term development of the school networks must depend very largely on future demographic trends and on the level of participation in education. It is difficult to predict with precision what the evolution of population may be. It is certain that average birth and death rates will change in similar directions as family planning, and social and health improvement programmes get under way. Further migration from the hills must continue and increased urbanization is likely. Then the feasibility of moving rapidly towards universal primary education can be assessed only after evaluation of performance to 1976.

The principle must be followed of concentration and location of schools at local growth centres; the choice of which is also related to economic and social development potential and the communications network, in addition to the demographic factors. As emphasis begins to be placed on the improvement of quality within the schools, more thought must be given to the provision of a range of options at the second stage in the middle/high school. To supply various options a larger school than that accepted at present must be envisaged.[2] Accordingly, it is unlikely that much increase in the number of middle/high schools in the district (outside Pokhara) will be required; increasing participation may push these schools towards a size allowing a certain choice of options. The problem of catering for first-level pupils in remote areas must also remain and acceptance of the one-teacher school and of exceptional norms will be necessary for a long time to come.

It is probably wise to refrain from defining any longer-term network for all these reasons, at least until after 1976 when a further census will have been taken and a performance evaluation has been made. In addition, it is likely that more educational reforms—structural and otherwise—may be introduced, thus rendering any attempt at greater precision rather futile.

1. *Equality of access of women to education*, op. cit., p. 22.
2. *Planning the location of schools: County Sligo, Ireland*, op. cit. (Chapter X).

V. Conclusions

In this final chapter, the main findings from the analysis in Chapter II and the main characteristics of the proposals made in Chapter IV are summarized. Comment is also made on the application in Nepal of the school map proposals made for Kaski.

1. Main findings

A. FIRST LEVEL

An overall dynamic growth of enrolment has built up over the last quinquennium and a relatively high average apparent participation rate of 54.0 per cent was achieved in Kaski in 1971 for the 6 to 10 age-group, as against the national average of 35 per cent. Still, participation was erratic and noticeably lower rates of less than 40 per cent were achieved in the western areas of the district (J–N).

However, a main positive finding in this regard is that the district as a whole already surpassed by far the national target of 64 per cent apparent participation rate for the 6 to 8 age-group, as the average rate achieved by kindergarten–grade III was 80.3 per cent, which means that this district can play a leading part in this regard to be followed elsewhere. On the other hand, the low proportion of girls enrolled—20 per cent—highlights a major problem to be solved in the years ahead. If three-year universal primary education is to be achieved at an early date, very significant improvement must be made here for, after all, girls constitute about half of the age-group concerned.

Because of the habitation pattern, a very high proportion of pupils live close to the schools and thus the participation rate is at least as much related to attitudes in the home as to shortcomings in either the school network or the teaching conducted. Solution of the problem will to a large extent involve effecting attitudinal changes among parents, although the economic obstacles to participation are by no means negligible.

Among other serious problems to be tackled is the very heavy wastage; two out of every three pupils admitted to grade I gain entry to grade V. Meanwhile, two-thirds of the teaching staff are untrained. Furthermore, there is a general under-utilization of teachers as the pupil/teacher ratio at 28.3:1 is below the norm. However, the forty-six smaller schools of below fifty enrolment with a rate of 19.2:1 are mainly responsible for this low overall average. In addition, the standard of accommodation is modest and even minimal modern teaching aids are sometimes missing.

B. SECOND LEVEL

Enrolment growth has also been rapid at the second level, but in 1971 47 per cent of pupils were enrolled in Pokhara schools, indicating a fairly important inequality for the rest of the district. Only 12 per cent of the total enrolment were girls, although of course this figure must necessarily be tied to the extent of girls' participation at the first level. But, once admitted, the retention rate is higher at this level; 70 per cent of those who gain admittance continue to the end of their courses.

While four-fifths of teaching staff at the second level are untrained, their level of qualifications is fairly high. Although the official pupil/teacher ratio is 25:1 on average the figure of 18.5:1 only is reached. Here again, it is the smaller schools which draw down the average; twenty-six schools with enrolments below 100 have pupil/teacher ratios of less than 15:1. Lack of trained vocational teachers has been mentioned as a serious obstacle and it is suggested that the curriculum followed, especially in middle schools, is still not sufficiently aligned to the real needs of the community.

Inequalities in the supply of education are more pronounced at the second level and, if the aim of equalization is to be pursued, further provision of schools will be necessary in some instances while contraction of the supply is indicated in others. Thus, among other areas, rationalization of this nature is required in areas C and L.

2. School map proposals, 1976

It was seen that the level of participation of the 6 to 8 age-group in 1971 was such that a more ambitious target than that of the national figure of 64 per cent is necessary for the District of Kaski. Accordingly, two separate sets of proposals were prepared, the First Scheme based on this

national target together with second-level criteria, and a more ambitious Second Scheme having a target of 100 per cent apparent participation rate for the 6 to 8 age-group by 1976.

An attempt was made in both schemes to strike a balance between stated social and economic objectives. Thus they contain, on the one hand, a certain consolidation of the network for alignment with demographic and communications factors, while on the other hand, some expansion is proposed for the purpose of reducing inequalities of supply.

However, it soon becomes obvious that the First Scheme is not viable since the low level of enrolment targets set has a curtailing effect on the present growth momentum and would lead to under-utilization of existing accommodation and teachers and thus inevitably to much increased unit costs. Contrariwise, the Second Scheme is more fitting to the overall spirit of the plan in that, if achieved, it would considerably boost first-level enrolment while maintaining a steady second-level expansion. In addition, it would ensure a full utilization of existing first-level accommodation and staff while transferring some pressure for further accommodation and staff to the second level, which is mainly privately financed.

But the most important finding from this testing of targets is that it is possible to achieve a 100 per cent *apparent* participation rate for the three-year primary age-group 6 to 8 by 1976 (*apparent* since over 25 per cent of pupils enrolled will be outside this age-group). And then, with a steady narrowing of the age-band enrolled, universal three-year primary education, with a *real* participation rate of 100 per cent, could be declared compulsory in 1981.

A summary of the proposals made in the Second Scheme is as follows:

i. First level

Accommodation: 1971 schools, 160 for 12,798 enrolment
+ five additional schools
− nine amalgamated schools
and two re-locations
= 1976 schools, 156 for 12,982 enrolment
Teachers: 1971, 457 of which 289 untrained
1976, 447 of which 112 untrained
Unit cost per pupil: 1971, Rs.41.3
1976, Rs.40.0 (at 1971 prices)

ii. Second level

TABLE 54. Summary of second-level proposals

	1971		1976 (net change)	
Accommodation	Schools	Enrol.	Schools	Enrol.
Middle schools	19	938	32	2 246
Middle/high schools	21	3 638	22	5 550
TOTAL	40	4 576	54	7 796

Teachers: 1971, 248 of which 197 untrained
1976, 311 of which 78 untrained
Unit cost per pupil: 1971 Pre-reform, Rs.173.9
1976 Second Scheme, Rs.128.0

It is obvious that if the Second Scheme were implemented, a more efficient use of resources would be achieved, as is indicated by a decreased unit cost, while simultaneously raising the growth momentum of the system and reducing inequalities from a wider network span. Total financing for the Second Scheme to be raised locally is Rs.273,155, which seems feasible in view of the fact that Rs.234,000 private and Rs.96,000 public funds were raised for the first level alone in 1971.

Of course, it is necessary to take into account the capital cost of the additional accommodation required to implement the scheme; this is considerable at the second level since accommodation must be provided at fourteen schools. It was seen that it is extremely difficult to cost the provision of accommodation since it is supplied by the local community, largely through voluntary labour and donations However, it was also seen that the annual recurrent saving for the first level from operating this scheme should easily compensate for the additional accommodation required. Indeed, at the second level, too, an annual recurrent saving of Rs.45.9 per pupil for 7,796 pupils (which amounts to Rs 357,836) should be more than sufficient to offset the capital outlay required, even if a modest annuation of 5 per cent over twenty-five years were used.

3. General comment

On the one hand, doubt can be cast on the hypothesis that literacy can be imparted in three years, particularly in the present circumstances of rural Nepal. On the other hand, it was seen that the reform has an inherent increasing unit cost effect, since transferring former first-level grades IV and V (comprising about one-quarter of pupils under the '5-3-2' system) to the second level automatically increases unit cost for them since costs at this level are much greater, mainly on account of the higher salaries of teachers. In the Kaski case study, it was shown in the Second Scheme to be possible through more efficient use of resources to compensate for this increase and actually reduce unit cost, but this may not be true for other parts of the country. In brief, the reform contains a conflict between the objective of boosting primary enrolment and that of making the most efficient use of resources, as measured by the reduction of unit cost.

Of course, the point may be made that it is movement of unit financing per pupil and source rather than unit cost that is more important and that this reform achieves expansion through transferring more financing responsibility to the private sector, as second-level education is mainly privately financed. However, this point highlights another conflict worthy of mention; since fees are much higher at the second level, many pupils who would otherwise continue to grade V must now drop out after grade III for economic reasons, thus confining the second level more and more to those who can afford to pay. The result is a playing off of those who are 'pushed' out after grade III against the new participants.

There also seems to be a certain inconsistency between the objective of economic rationalization and the apparent proliferation of a middle school network, since it is difficult in the small-sized schools envisaged to make efficient

utilization of the specialist teachers and equipment required to successfully impart pre-vocational skills. However, given the extremely rugged nature of the terrain where walking (especially in the 'hilly' areas) is the only means of transport possible and because of the prohibitive cost of a boarding-school solution, perhaps at this stage the policy of compromise between economic rationalization and reduction of inequalities, as illustrated by the type of network proposed, does make sense. It is appropriate to mention that views put forward by local administrators and supervisors in a discussion on draft proposals held in Pokhara are incorporated in the proposals now made here.

It must be emphasized also, that the proposals made textually and illustrated on the school map remain as targets until they have been implemented. Converting the enrolment targets set for new participants into effective enrolments will require a concerted information campaign involving school staff, supervisors, *panchayat* committees, extension workers and voluntary organizations, among others. Raising the level of participation of girls poses the major problem. The schools must also change in order to convince parents of the benefits they impart. Curriculum development which gives functional literacy a higher priority in the first-level programme and improvement of the proportion of trained teachers are two ways in which the school can become more meaningful to the community.

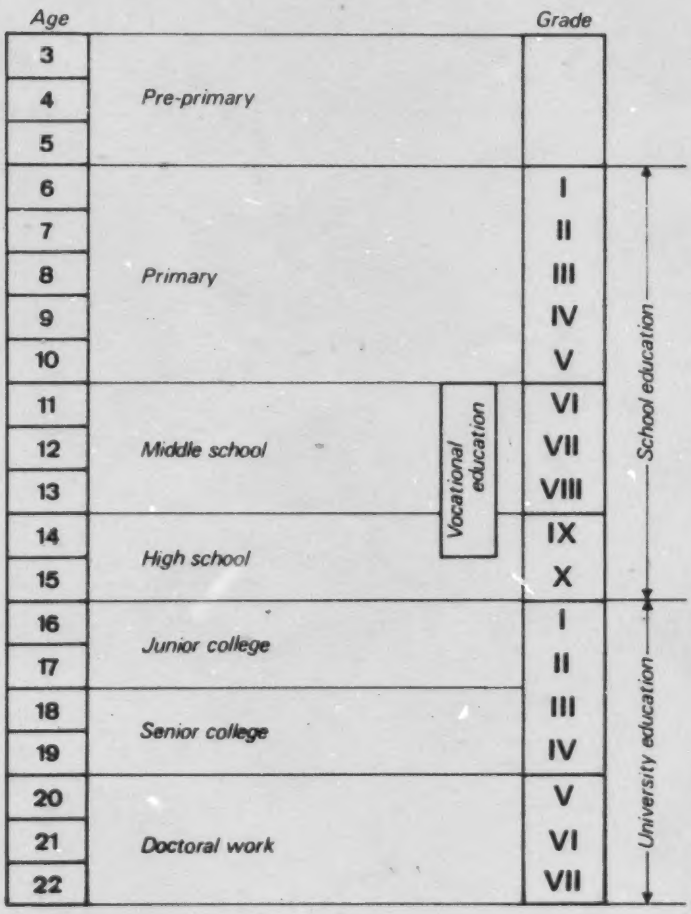
It is obvious from this case study that it is important to take account of the differences between districts in level of educational development. Many may achieve the national average apparent participation rate of 64 per cent for the 6 to 8 age-group, some may even surpass it, but there are many among the seventy-five districts which must fall far short of it. Analysis must first be undertaken, however, before performance evaluation can be made. It is also clear that the school mapping technique can constitute a good instrument for application in other districts in this regard. In addition to being a useful analytical tool at district level, the school map can also be an excellent instrument for phasing of priorities in implementation and indeed for performance evaluation. Thus, it may fairly be said that the school mapping technique can make an important contribution towards the solution of the many implementation problems encountered in Nepal as elsewhere.

Finally, it must be added that the proposed school map is no more than a rational basis for discussion and negotiation among the various parties concerned—central and local administration, other development agents, teachers, etc.—before decisions on implementation are taken.

Appendix

PRE-REFORM		POST-REFORM
Two years after secondary education	I.A., I.Sc., I.Com.	Certificate
Two years after university education	B.A., B.Sc., B.Com.	Diploma
Four years after university education	M.A., M.Sc., etc.	Degree
		Research

Pre-reform structure of Nepalese education system



NOTE In twenty-nine high schools vocational subjects are offered in Grades VI–X. Before the introduction of the new education plan the technical institutions were under different Ministries.

FIGURE 1. *Structure of the Nepalese education system*

TABLE 1. Kindergarten (pre-primary) enrolment by area 1966/67 to 1970/71

Area	1966/67	1967/68	1968/69	1969/70	1970/71
A	56	56	34	36	45
B	223	244	245	266	288
C	305	313	323	312	407
D	71	80	93	96	126
E	132	139	150	168	181
F	25	48	61	65	97
G	11	17	24	28	37
H	103	100	107	122	145
I	97	77	111	115	124
J	38	30	53	59	72
K	107	111	134	177	209
L	161	170	163	206	224
M	35	58	47	73	135
N	33	33	22	51	116
O	73	87	95	127	156
TOTAL	1 470	1 563	1 662	1 901	2 362

TABLE 2. Enrolment kindergarten–grade V by area and sex, 1970/71

	Kindergarten	Grade I		Grade II		Grade III		Grade IV		Grade V		Total I–V	
Area	MF	M	F	M	F	M	F	M	F	M	F	M	F
A	45	497	323	350	152	325	156	275	143	227	99	1 674	873
B	288	149	48	129	22	120	29	83	33	75	12	556	144
C	407	219	44	175	28	148	15	136	30	115	12	793	129
D	126	198	41	153	22	139	16	120	13	91	17	701	109
E	181	137	40	110	16	94	18	72	5	55	9	468	88
F	97	52	10	49	7	58	13	47	7	38	10	244	47
G	37	127	72	88	27	98	28	102	15	72	18	487	160
H	145	145	35	154	21	134	32	125	23	116	13	674	124
I	124	83	20	51	8	42	5	66	8	47	2	289	43
J	72	95	20	56	10	61	6	53	9	46	4	311	49
K	209	150	26	117	20	113	6	101	10	101	3	582	65
L	224	108	15	109	13	109	14	101	8	84	8	511	58
M	135	60	6	56	9	65	3	58	3	46	2	285	23
N	116	87	6	60	4	76	2	54	2	81	5	358	19
O	156	160	43	93	14	77	4	85	16	76	4	491	81
TOTAL	2 362	2 267	749	1 750	373	1 659	347	1 478	325	1 270	218	8 424	2 012
GRAND TOTAL		3 016		2 123		2 006		1 803		1 488		10 436	

TABLE 3. Second-level enrolment by grade and sex, 1970/71

Area	Grade VI		Grade VII		Grade VIII		Grade IX		Grade X		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
A	309	103	304	78	334	89	357	73	406	87	1 710	430	2 140
B	76	14	57	10	56	4	29	1	41	2	259	31	290
C	92	1	60	3	61	2	66	1	49	4	328	11	339
D	76	2	64	9	50	4	—	—	—	—	190	15	205
E	51	9	35	1	19	1	27	—	23	—	155	11	166
F	23	1	20	—	15	—	—	—	—	—	58	1	59
G	41	1	24	1	23	1	12	—	20	—	120	3	123
H	94	4	71	3	54	2	42	1	45	1	306	11	317
I	33	1	30	1	21	—	—	—	—	—	84	2	86
J	13	5	12	1	4	1	—	—	—	—	29	7	36
K	91	3	59	6	54	—	59	1	38	—	301	10	311
L	84	1	68	2	55	5	48	1	34	1	289	10	299
M	37	1	36	5	32	5	—	—	—	—	105	11	116
N	12	—	12	1	5	—	4	—	—	—	33	1	34
O	21	6	18	—	9	1	—	—	—	—	48	7	55
TOTAL	1 053	152	870	121	792	115	644	78	656	95	4 015	561	4 576
GRAND TOTAL	1 205		991		907		722		751		4 576		

TABLE 4. Effect of structural reform '5-3-2' to '3-4-3' on second-level enrolments (using 1971 figures) and comparison with First- and Second-Scheme targets

Area	First stage '5-3-2' VI–VIII	Enrolment		First stage '3-4-3' IV–VII	Additional enrolment first stage (Difference between VI–VIII and IV–VII)	Enrolment		Additional enrolment second stage (Difference between IX–X and VIII–X)	Enrolment projection 1976			
									First Scheme		Second Scheme	
		IV–V[1]	VIII			IX–X	VIII–X		IV–VII	VIII–X	IV–VII	VIII–X
A	1 217	744	423	1 538	321	923	1 346	423	572	286	706	353
B	217	203	60	360	143	73	133	60	218	109	351	176
C	219	293	63	449	230	120	183	63	279	141	484	243
D	205	190	54	341	136	—	54	54	247	125	358	178
E	116	97	20	193	77	50	70	20	204	103	332	167
F	59	97	15	141	82	--	15	15	101	52	171	86
G	91	179	24	246	155	32	56	24	209	106	301	151
H	228	233	56	405	177	89	145	56	249	126	362	182
I	86	113	21	178	92	—	21	21	111	56	190	96
J	36	112	5	143	107	—	5	5	156	79	259	130
K	213	193	54	352	139	98	152	54	234	118	450	226
L	215	171	60	326	111	84	144	60	200	102	401	198
M	116	101	37	180	64	—	37	37	145	73	272	136
N	30	125	5	150	120	4	5	1	143	73	272	136
O	55	181	10	226	171	—	10	10	182	92	286	143
TOTAL	3 103	3 032	907	5 228	2 125	1 473	2 376	903	3 250	1 641	5 195	2 601

1. Less IV–V retained specially at first-level remote schools.

TABLE 5. Small schools between twenty-six and fifty in enrolment, 1971[1]

Area	*Panchayat*	School	Village	1971			
				Participation rate	Enrolment	Teachers	P/T ratio
B	Sishuwa	Indrayani	Pachashaiya	53.6	47	2	23.5
C	Deurali	Bhairabi	Khadagaun	51.3	42	2	21.0
		Gaun Farka	Dotelkuna		50	2	25.0
	Khalte	Kalpa	Maudanda		48	2	24.0
D	Majhgaon	Basundhara	Hadikhola	60.6	39	2	19.5
	Shyaklung	Himalaya	Lipihani		38	1	38.0
		Gyanjyoti	Kaure		36	2	18.0
	Majhathana	Bhurtel	Bhurtel		50	3	16.7
	Bhgawatitar	Sova	Baraldanda		39	2	19.5
E	Thakgaon	Bhumeswara[1]	Thak		13	1	13.0
	Jhajermare	Daiveswari	Kaphalghari	43.1	50	1	50.0
	Thuloswara	Bamchandrakala	Bhainse		39	2	19.5
	Thakgaon	Dhanu Bans	Chachok		50	4	12.5
	Taprang	Siddha	Chipli		40	1	40.0
	Parche	Parche Nalku	Parche		50	2	25.0
F	Arwa	Rastriya[1]	Kaure Arwa		19	2	9.5
G	Dandakhor	Bhalambhasha	Bhalam	57.5	41	1	41.0
		Devi	Dandakhor		37	1	37.0
		Mahendra	Ryalechaur		41	4	12.6
	Armala Patale	Sita	Armala Patale 8		35	3	11.7
		Narayani	Armala Patale 1		39	1	39.0
	Chinnidanda	F.C.E. No. 3	Mahadgaunda		28	1	28.0
	Kahumayalbot	Kalika	Kanhu		34	3	11.3
		Manhu	Kanhu		26	1	26.0
H	Bhurjunkhola	Barahi	Khadarjung	59.5	46	2	23.0
		Navin Bala	Darikhet		48	3	16.0
		Kiran	Ghalekharka		41	2	20.5
	Garlangchharepani	Jyotibhavan	Okhle		41	2	20.5
I	Upallodhachowk	Annapurna	Mhirche	41.4	42	2	21.0
J	Ghalelphedi	Saraswati	Siling	37.4	39	2	19.5
		Ghalelkaski	Khogaun		44	2	22.0
		Gaurishankar	Imu		30	2	15.0
K	Dhampus	Udaya	Jhagade	38.8	47	2	23.5
	Bhichuk	Himalaya	Naga		42	2	21.0
		Himalaya	Jhijhirka		38	2	19.0
L	Ramjadeurali	Deurali[1]	Thati		19	4	4.8
	Sallyan	Sitala	Jhowang	38.7	47	2	23.5
	Ramjatilahar	Mahendra	Luxmipur		43	2	21.5
		Gyanendra	Thamarjung		40	2	20.0
		Panchaswarup	Tilahar Ratmata		45	2	22.5
	Ramjadeurali	Siddha	Rayu		37	2	18.5
		Saraswati	Dabang		35	2	17.5
N	Gyarjati	Ratna	Gyarjati	37.1	33	2	16.5
O	Chapakot	Makanna Devi	Mawanpur	56.3	33	1	33.0
	Bhumdi	Luxmi	Bhumdi 4		31	2	15.5
		Anada	Phewa 3		35	3	11.7
TOTAL 46 schools					1 787	93	19.2

1. Three schools of 0–25 enrolment.

TABLE 6. Admissions, repeaters and drop-outs, from a random selection of first-level schools, 1971/72

Panchayat	Name and address of the school		New admissions							
			Grade I 1971/72				Grade II 1971/72			
			Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Upallodhachowk	Anapurna Primary school, Rarpanimirsa	I	18	19	21	—	6	6	6	—
		II	13	1	2	—	—	—	—	—
Deurali	Virendra Primary school, Ramadi	I	31	21	15	21	10	9	8	9
		II	—	—	—	2	—	—	—	—
Pokhara	Primary school, Matepani	I	52	52	70	74	35	37	38	38
		II	—	18	4	4	2	2	—	—
Dhital	Bhumeswar Primary school, Dhital	I	24	22	22	22	14	14	14	14
		II	3	—	—	—	—	—	—	—
Sishuwa	Amarsiddha Primary school, Pachabhaiya	I	10	24	24	24	15	16	16	16
		II	14	2	1	—	1	—	—	—
Ramjatilahar	Virendra Primary school, Ramja, Tilhar	I	10	—	—	—	12	—	—	—
		II	9	—	1	—	—	—	—	—
Bhumdi	Okhle Danda Primary school, Bhumdi	I	17	13	13	13	14	15	15	15
		II	—	—	—	—	2	1	—	—
Sishuwa	Saraswati Primary school, Khudi	I	33	31	34	34	16	15	15	15
		II	30	—	5	—	4	—	1	—
Sishuwa	Shanti Primary school, Sishuwa	I	62	56	55	48	18	17	17	13
		II	39	7	—	—	6	—	—	—
Lwang	Barahi Primary school, Lwang	I	23	23	23	21	9	9	9	9
		II	13	1	—	—	1	—	—	—
Thuloswara	Vamchandrakala Primary school, Madibesi	I	34	—	—	3	6	—	—	—
		II	—	2	1	—	—	—	—	—
Upallohumja	Ambika Primary school, Suikhet, Upallo Hemja	I	29	25	21	19	5	5	6	6
		II	—	—	4	—	1	—	—	—
Arghaubazar	Luxmi Primary school, Arghaubazar	I	57	67	65	67	19	20	20	21
		II	14	—	11	—	24	—	2	—
Sishuwa	Indrani Primary school, Lamaswara	I	20	17	16	17	8	8	8	7
		II	8	—	—	—	—	3	—	—
Pokhara	Gogan Primary school, Gaun Gaunda	I	22	9	14	—	5	5	6	—
		II	—	—	4	—	—	—	1	—
	TOTAL	I	442	379	393	363	192	176	178	163
		II	143	31	33	6	41	6	4	—

I = registered enrolment; II = new admissions.

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New admissions				Repeaters due to failures in the annual examination								
				Grade I			Grade II			Grade III		
Grade III 1971/72				Total failures in the annual exam.	Grade repeaters due to failures	Drop-outs among grade repeaters	Total failures in the annual exam.	Grade repeaters due to failures	Drop-outs among grade repeaters	Total failures in the annual exam.	Grade repeaters due to failures	Drop-outs among grade repeaters
Feb.	May	Aug.	Nov.									
5	5	4	—	6	6	1	—	—	—	—	—	—
—	—	—	—									
10	8	8	7	6	6	—	1	1	—	2	1	1
—	—	—	—									
46	46	46	47	—	—	—	—	—	—	—	—	—
1	—	1	—									
8	8	8	8	3	3	—	2	2	—	2	2	2
—	—	—	—									
10	11	10	8	1	1	—	2	2	—	3	—	3
1	—	—	—									
7	—	—	—	9	9	8	5	5	5	3	2	1
1	—	—	—									
19	19	17	17	6	5	1	—	—	—	—	—	—
2	1	—	—									
13	14	12	12	1	1	—	1	1	1	—	—	—
—	—	—	—									
11	10	10	10	23	21	2	—	—	—	—	—	—
3	1	—	—									
14	14	14	14	10	—	10	—	—	—	2	—	2
1	—	—	—									
4	—	—	—	25	18	5	—	—	—	—	—	—
—	—	—	—									
7	6	5	5	4	4	1	1	1	—	—	—	—
—	—	—	—									
26	26	24	24	—	—	—	—	—	—	5	1	4
3	—	1	—									
15	15	18	16	3	3	—	—	—	—	2	2	—
2	—	—	—									
9	9	9	—	3	3	—	—	—	—	—	—	—
—	—	—	—									
204	191	185	168	100	80	28	12	12	6	19	8	13
14	2	2	—									

SOURCE Ministry of Education, 1971/72.

TABLE 7. Population required to justify full '3-4-3' provision and '3-4' only on the basis of participation rates set

Area	Target particip. rate first level 1976	Pop. reqd. to justify full '3-4-3' at 1976			Target particip. rate first level 1981	Pop. reqd. to justify full '3-4-3' at 1981			Pop. reqd. to justify '3-4' supply only		
		A[1]	B	C		A	B	C	1976	1981	Universal primary
A	83.9	6 948	4 631	7 720	95	6 136	4 091	6 818	3 859	3 408	3 238
B	64.4	9 051	6 034	10 057	70	8 327	5 551	9 253	5 028	4 326	3 238
C	60.1	9 699	6 466	10 777	68	8 572	5 715	9 525	5 388	4 762	3 238
D	71.7	8 130	5 420	9 033	77	7 570	5 047	8 412	4 516	4 205	3 238
E	63.6	9 165	6 110	10 183	70	8 327	5 551	9 253	5 091	4 326	3 238
F	60.7	9 603	6 402	10 670	68	8 572	5 715	9 525	4 988	4 762	3 238
G	71.9	8 107	5 405	9 008	77	7 570	5 047	8 412	4 503	4 205	3 238
H	71.6	8 141	5 427	9 046	77	7 570	5 047	8 412	4 522	4 205	3 238
I	60.3	9 667	6 444	10 741	68	8 572	5 715	9 525	5 370	4 762	3 238
J	62.6	9 312	6 208	10 346	68	8 572	5 715	9 525	5 173	4 762	3 238
K	54.2	10 755	7 170	11 950	64	9 108	6 072	10 120	5 974	5 059	3 238
L	52.0	11 210	7 473	12 455	64	9 108	6 072	10 120	6 227	5 059	3 238
M	55.1	10 579	7 053	11 754	64	9 108	6 072	10 120	5 877	5 059	3 238
N	54.5	10 695	7 130	11 884	64	9 108	6 072	10 120	5 941	5 059	3 238
O	60.0	9 715	6 477	10 794	73	7 985	5 323	8 873	5 397	4 436	3 238
AVERAGE	64.9	8 981	5 988	9 979	74	7 909	5 273	8 788	4 989	4 393	3 238

1. See Table 38.

TABLE 8. Unit financing per pupil by area in 1971 (in Nepalese rupees, current prices)

Area	Unit financing per pupil					Total unit cost/pupil (capital and recurrent)	Apparent financing gap per pupil (minus = deficit)
	Government	Local authority	Total public	Total private	Total public and private		
A	12.9	30.3	43.2	2.5	45.7	43.1	2.6
B	10.0	—	10.0	21.3	31.3	28.7	2.6
C	39.7	2.1	41.8	16.9	58.7	57.9	0.8
D	26.3	—	26.3	25.2	51.5	48.3	3.2
E	15.3	—	15.3	25.1	40.4	34.1	3.3
F	31.2	—	31.2	17.8	49.0	44.1	4.9
G	12.7	5.1	17.8	13.2	31.0	30.8	0.2
H	19.8	—	19.8	13.8	33.6	31.6	2.0
I	31.4	—	31.4	26.1	57.5	54.2	3.3
J	33.1	—	33.1	36.0	69.1	50.2	18.9
K	20.6	—	20.6	24.5	45.1	44.9	0.2
L	18.0	—	18.0	27.9	45.9	41.0	4.9
M	28.0	17.8	45.8	18.1	63.9	22.4	41.5
N	15.6	8.3	23.9	24.4	48.3	51.5	−3.2
O	23.1	—	23.1	34.3	57.4	53.6	3.8
TOTAL	21.0	7.6	28.6	18.3	46.9	43.1	3.8

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The IIEP research project on planning the location of schools

The extensive adoption of over-all national educational planning has called for the study of more effective strategies of implementation. School mapping can provide an excellent technique for bridging the gap between planning and implementation, not only for the rationalization of school networks as such but also for the introduction of reforms, the consistent application of national norms and the stimulation of regional participation in the planning process. This last aspect marks an important advance towards controlled decentralization of the educational planning process and, since it is closely involved with economic, social and physical planning, facilitates the achievement of integrated regional planning.

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The book

This case study on the District of Kaski, Nepal highlights the need for regional and local planning of education as a complement to the National Education Plan and illustrates well the applicability of school mapping as a planning technique in this regard. The micro-analysis undertaken shows that while Kaski had by 1971 far surpassed the national average target for participation at the first level, the situation was still very uneven internally and many other inequalities across the District were also discovered.

It becomes obvious that for achievement of the targets set in the National Education Plan, an order of priorities must be set up both between and within Districts; analysis at the local level is conducted in the school mapping technique as a pre-requisite for such programming.

The authors

James McCabe has been a staff member of the IIEP for the duration of the research project on planning the location of schools and was co-author of the pilot study on County Sligo, Ireland, the first in this series. Before joining the Institute in 1971 he had ten years' teaching experience followed by five years as Chief Executive in local administration of education.

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ISBN 92-803-1067-4